

hb397geothermallogo.pdf

Uploaded by: Adam Santry

Position: FAV



February 20th, 2024

The Honorable CT Wilson
House Economic Matters Committee
Room 231
House Office Building
Annapolis, Maryland 21401

Dear Chairman Wilson and Members of the House Economic Matters Committee:

On behalf of the Maryland Geothermal Association (MGA) I write in support of House Bill 397, Public Utilities – Thermal Energy Network Systems – Authorization and Establishment (Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act. The Maryland Geothermal Association MGA is a non-profit trade organization that was formed in 2013 in order to promote the development and installation of highly efficient geothermal heating and cooling systems for both residential and commercial applications.

Our association members believe that expanding the use of geothermal energy can assist the state in meeting its renewable energy goals as well as lead to significant job creation. Geothermal systems can provide constant baseline power. The earth's interior heat is consistent, allowing plants and systems to operate consistently regardless of weather or time of day. In addition, geothermal systems have lower emissions and are more efficient when compared to fossil fuels and other recognized forms of renewable energy because of the reliability and consistency the energy source utilized.

From an economic development perspective, increased geothermal capacity could support thousands of installation and construction jobs in Maryland. It is estimated that 4,300 direct geothermal industry jobs would be created per 500 Mega Watts of installed capacity. The ancillary benefits are also profound. Should Maryland invest in an enhanced geothermal industry, there is a potential for manufacturing and supply chain businesses to locate to the State. It is estimated that 2.5 indirect jobs may be created for each direct geothermal job.

Our association membership urges a favorable report.

Sincerely,
Adam Santry, President
Maryland Geothermal Association

HB0397 2-20 Written Testimony IBEW LU 410.pdf

Uploaded by: Brian Terwilliger

Position: FAV



**LOCAL UNION 410
INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS**

February 20, 2024

Committee: Economic Matters

Testimony on HB 397 Public Utilities – Thermal Energy Network Systems – Authorization and Establishment (Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act)

Position: Favorable

Hearing Date: February 22, 2024 at 1:00PM

Good afternoon, Chairman Wilson, Vice-Chair Crosby, and members of the Economic Matters Committee:

I would like to begin my written testimony by introducing myself and Local Union 410 of the International Brotherhood of Electrical Workers (“IBEW Local 410” or “the Union”). My name is Brian Terwilliger, and I am the Assistant Business Manager for IBEW Local 410. I was appointed Assistant Business Manager on July 20, 2022.

IBEW Local 410 is a labor organization representing non-managerial utility workers at Baltimore Gas & Electric Company (“BGE”). The Union is the duly elected and recognized exclusive bargaining representative for approximately one-thousand four hundred (1,400) non-managerial employees of BGE, including its non-managerial employees in its five largest departments. Two of these departments are the Gas–Construction Maintenance & Repair department and the Gas–Emergency Response department.

As of November 27, 2023, six-hundred thirty-nine (639) workers were designated under BGE’s Natural Gas department seniority roster. Of those workers, three-hundred and sixty-nine (369) had an occupation seniority date of or after January 1, 2014. Currently BGE’s retirement age is sixty-two years (62) old with thirty-five (35) years of service. What this means is that these three-hundred sixty-nine (369) workers need to have an additional twenty-five years (25) of service at BGE in order to retire.

These one-thousand-four hundred (1,400) workers, also called bargaining unit employees (“BUEs”), are among those who contribute daily, directly, and significantly to BGE’s efforts to provide safe and reliable service to its customers.

These workers are also fellow members of our community. Unlike contracted laborers who are typically part of a transitory workforce who travel from job to job, these workers are those who live in Maryland, own or aspire to own homes here, and raise their families in our community.

HB 397 will ensure a transition to thermal energy system(s) and accompanying residential electrification that protects worker rights by promoting stable labor relations. Protecting the local workforce who contribute daily, directly, and significantly to safe and reliable gas service to customers is paramount to Maryland's infrastructure.

These workers are covered by a current collective bargaining agreement between IBEW Local 410 and BGE which was ratified on March 1, 2023, and will remain in effect for the following six (6) years.

IBEW Local 410 supports HB 397 as an adherence to federal policy supporting and encouraging collective bargaining. Specifically, federal policy is expressly articulated in 29 U.S.C. § 151, which provides as follows:

The denial by some employers of the right of employees to organize and the refusal by some employers to accept the procedure of collective bargaining lead to strikes and other forms of industrial strife or unrest, which have the intent or the necessary effect of burdening or obstructing commerce by (a) impairing the efficiency, safety, or operation of the instrumentalities of commerce; (b) occurring in the current of commerce; (c) materially affecting, restraining, or controlling the flow of raw materials or manufactured or processed goods from or into the channels of commerce, or the prices of such materials or goods in commerce; or (d) causing diminution of employment and wages in such volume as substantially to impair or disrupt the market for goods flowing from or into the channels of commerce.

The inequality of bargaining power between employees who do not possess full freedom of association or actual liberty of contract, and employers who are organized in the corporate or other forms of ownership association substantially burdens and affects the flow of commerce, and tends to aggravate recurrent business depressions, by depressing wage rates and the purchasing power of wage earners in industry and by preventing the stabilization of competitive wage rates and working conditions within and between industries.

Experience has proved that protection by law of the right of employees to organize and bargain collectively safeguards commerce from injury,

impairment, or interruption, and promotes the flow of commerce by removing certain recognized sources of industrial strife and unrest, by encouraging practices fundamental to the friendly adjustment of industrial disputes arising out of differences as to wages, hours, or other working conditions, and by restoring equality of bargaining power between employers and employees.

Experience has further demonstrated that certain practices by some labor organizations, their officers, and members have the intent or the necessary effect of burdening or obstructing commerce by preventing the free flow of goods in such commerce through strikes and other forms of industrial unrest or through concerted activities which impair the interest of the public in the free flow of such commerce. The elimination of such practices is a necessary condition to the assurance of the rights herein guaranteed.

It is hereby declared to be the policy of the United States to eliminate the causes of certain substantial obstructions to the free flow of commerce and to mitigate and eliminate these obstructions when they have occurred by encouraging the practice and procedure of collective bargaining and by protecting the exercise by workers of full freedom of association, self-organization, and designation of representatives of their own choosing, for the purpose of negotiating the terms and conditions of their employment or other mutual aid or protection.

The plain language of this statute provides that it is federal policy to encourage the practice and procedure of collective bargaining and it enumerates the multiple benefits of this recognized practice to the free flow of commerce.

Here, HB 397 furthers this policy by (1) mandating a community benefit agreements that promotes a labor relations approach that ensures workers are free to organize and collectively bargain, *see* HB 397 § 7-1001(D), (2) requiring the implementation plan include explanation of how the gas company met with certified representatives of BUEs, *see* HB 397 § 7-1002, and (3) instructing electric, gas, and/or water companies to work with its existing BUE units to complete the front-of-meter projects relating to the construction of the thermal energy network system, and to the extent work is outsourced to a contractor, *see* HB 397 § 7-1004.

IBEW Local 410 and BGE's working relationship is itself a testament to the benefits of collective bargaining. While by no means perfect, the relationship between Local 410 and BGE is mature and stable. When disputes pertaining to the parties' contracts do arise

between Local 410 and BGE, such disputes are generally resolved through the parties' grievance and arbitration procedures, and such resolutions are final and binding on the parties. When a collective bargaining agreement is set to expire, rather than ultimately engaging in a show of economic force and counterforce, the parties have sat down and negotiated a new agreement in a constructive manner. Such an agreement, once reached, is the product of good-faith bargaining, characterized by give-and-take exchanges, proposals, and counter proposals between the parties; that is the hallmark of collective bargaining under the National Labor Relations Act.

These benefits are also captured in 29 U.S.C. § 151 and sought by HB 397 in § 7-1001(D)(III)(1)–(6). In IBEW Local 410's estimation, the importance of strong and stable relationships between public service corporations and their employees and contracted labor cannot be overstated. IBEW Local 410 is happy to see that HB 397 further supports these sorts of relationships.

For these reasons, IBEW Local 410 requests a favorable report on HB 397.

Sincerely,

Brian Terwilliger
IBEW Local 410
Assistant Business Manager

HB0397_WARMTH_Act_MLC_FAV.pdf

Uploaded by: Cecilia Plante

Position: FAV



TESTIMONY FOR HB0397

Public Utilities - Thermal Energy Network Systems - Authorization and Establishment (Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act)

Bill Sponsor: Delegate Charkoudian

Committee: Economic Matters

Organization Submitting: Maryland Legislative Coalition

Person Submitting: Aileen Alex, co-chair

Position: FAVORABLE

I am submitting this testimony in favor of HB0397 on behalf of the Maryland Legislative Coalition. The Maryland Legislative Coalition is an association of activists - individuals and grassroots groups in every district in the state. We are unpaid citizen lobbyists, and our Coalition supports well over 30,000 members.

Maryland needs a variety of energy sources to achieve its ambitious statutory requirement to reduce greenhouse gas emissions to 60% of 2006 levels by 2031. Geothermal systems offer a super-efficient, inflation resistant, reliable way to heat and cool buildings. These systems can be constructed today. They are a proven, carbon-free technology that can minimize additional electric demand on the grid.

However, individual geothermal heat pumps are significantly more expensive than other choices, with a 5 to 10 years payback. By networking a neighborhood, savings result from sharing the costs of the boreholes and also sharing the waste heat generated in local businesses. HB0397 would create pilot projects and gather experience and data to assess how well networked geothermal systems will work in different areas in Maryland.

Our members strongly support clean, renewable energy and we believe that putting geothermal in the energy mix is a positive step in reducing Maryland's reliance on dirty energy.

We support this bill and recommend a **FAVORABLE** report in committee.

HB0397 OPC Testimony.pdf

Uploaded by: David Lapp

Position: FAV

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BRANDI NIELAND
DIRECTOR, CONSUMER
ASSISTANCE UNIT

BILL NO.: House Bill 397 - Public Utilities – Thermal Energy Network Systems – Authorization and Establishment (Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act)

COMMITTEE: Economic Matters Committee

HEARING DATE: February 22, 2023

SPONSOR: Delegate Charkoudian

POSITION: Favorable

The Office of People’s Counsel (“OPC”) supports House Bill 397 to establish a pilot thermal energy network system. Networked geothermal is an innovative technology that could help Maryland achieve its decarbonization goals while bringing benefits to customers, utilities, and workers.

HB 397 would require large gas companies¹ to develop a plan for a pilot networked geothermal system. Pilots would last for two years and gather information to assess how networked geothermal systems may advance climate goals, lower the costs of electrification, and avoid gas infrastructure costs. The bill will allow the Maryland Public Service Commission (“PSC”), and the gas companies it regulates, to gather essential information on the viability and regulation of networked geothermal systems.

Networked geothermal systems may be an important part of the mix of technologies that together will be necessary to meet the State’s greenhouse gas reduction goals. The Climate Solutions Now Act of 2022 establishes a goal of 60 percent GHG

¹ OPC supports the forthcoming amendment that would limit applicability to large gas companies.

emissions reductions by 2031 and net-zero GHG emissions by 2045. Emissions from the building sector—driven by emissions for space heating, water heating, cooking, and industrial heating processes—account for 16% of Maryland’s GHG emissions.² The Maryland Department of the Environment’s recently released Climate Pollution Reduction Plan recommends new policies for decarbonizing Maryland’s building sector,³ with the aim to “transition almost all of Maryland’s fuel-burning buildings to be all-electric by 2045. . . .”⁴

Networked geothermal could help the State meet its GHG goals several ways. First, it would reduce fossil fuel consumption by obviating the need to use natural gas for building and water heat. Second, geothermal systems are highly efficient—more efficient even than modern electric heat pumps for heating homes,⁵ which themselves are 2.2-4.5 times more efficient than efficient gas furnaces.⁶ Third, geothermal systems may be especially effective at helping manage energy loads, reducing or delaying the need for new electric infrastructure.

Networked geothermal systems are already used in some settings to efficiently heat and cool buildings on college campuses and other settings. Massachusetts and New York are both running pilot programs to evaluate their potential to efficiently heat and cool residential and commercial buildings in neighborhoods. HB 397 would create a similar pilot program for Maryland’s gas utilities.

HB 397 contains important consumer protection measures. It ensures that customers opting-in to the pilot will not have to pay out-of-pocket for any necessary home electrification—including appliance purchases—or weatherization projects. It prohibits non-pilot customers from subsidizing home appliance costs for pilot participants through rates; instead, it directs the Maryland Energy Administration to coordinate

² Md Dep’t. of Env’t, *Maryland’s Climate Pollution Reduction Plan* (Dec. 2023) at 34.

³ *Id.* at 39-40 (proposing a “Zero Emission Heating Equipment Standard” and “Clean Heat Standard”).

⁴ *Id.* at 40.

⁵ U.S. Dep’t of Energy, *Geothermal Heating & Cooling*, <https://www.energy.gov/eere/geothermal/geothermal-heating-cooling> (“Geothermal heat pumps can reduce energy consumption and emissions up to 44% compared to air-source heat pumps and 72% compared to standard air-conditioning equipment.”).

⁶ Claire McKenna, Amar Shah, and Mark Silberg, *It’s Time to Incentivize Residential Heat Pumps*, RMI (June 8, 2020), <https://rmi.org/its-time-to-incentivize-residential-heat-pumps/#:~:text=The%20United%20States%20has%20made,fossil%20fuel%20use%20in%20building.>

funding sources to pay for necessary customer appliances. We understand that a forthcoming amendment will further protect pilot participants by ensuring that they are not responsible for any customer-side costs resulting from the decommissioning or discontinuation of a pilot. We support that amendment.

Pilot programs provide an important opportunity to assess technological innovations that could result in savings for utility customers while advancing State policy goals. Without requiring innovative pilots, utilities may be prone to stagnation and the forces of inertia that make it easy to continue relying on conventional technologies. While the costs of pilot programs are borne by all ratepayers, a well-constructed pilot should benefit all customers. Further, HB 397 contains important cost containment measures. The pilot scope is limited to 1-2 projects per utility and provides that the PSC can only approve a plan if it is in the best interest of the public and ratepayers. Maryland needs innovative approaches to facilitate a cost-effective transition away from reliance on fossil-gas. OPC supports limited pilot programs, like the WARMTH Act, that have potential to benefit customers and help the State achieve its climate goals.

Recommendation: OPC requests a favorable Committee report on HB 397.

Testimony HB397 Geothermal Networked Systems Final

Uploaded by: Debbie Cohn

Position: FAV

Committee: Economic Matters
Testimony on: HB397 –Public Utilities – Thermal Energy Network Systems – Authorization and Establishment -Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act
Submitting: Deborah A. Cohn
Position: Favorable
Hearing Date: February 22, 2024

Dear Chair and Committee Members:

Thank you for allowing my testimony today in support of HB397.

Maryland has committed to reducing greenhouse gas emissions (GHGs) to 60% of 2006 levels by 2031 and transitioning to a net-zero economy by 2045. Doing so will require major reductions in emissions arising from heating and cooling buildings.

Geothermal heating and cooling systems (ground source heat pumps or GHPs) generate significantly less GHGs than gas or electric resistance equipment and even less than air-source heat pumps. The [U.S. Department of Energy estimates](#) that GHPs “can reduce energy consumption and emissions up to 44% compared to air-source heat pumps and 72% compared to standard air-conditioning equipment.” GHPs require less energy than air-source heat pumps because, for both heating (including in water heaters) and cooling, GHPs use heat extracted from boreholes 300-500 feet below ground (50-60° F, year-round) rather than from the ambient air (typically, in Maryland, midwinter lows in the low- to mid-20s and mid-summer highs in the mid-to-upper 80s). The difference between geothermal and desired building temperatures is much smaller than the difference between ambient air and desired building temperatures.

Problem: While geothermal heat pumps are a well-tested technology,¹ and their use in districts, such as universities, is spreading,² their use in networked systems to heat small neighborhoods is more recent.³ Pilot projects can be useful to demonstrate proof of concept and identify program design improvements.

Solution: HB397 would create pilot projects and gather information to assess how well networked geothermal systems will work in different areas in Maryland.

Each natural gas utility would be required to develop one or two pilot thermal energy projects to replace gas infrastructure with a thermal energy network system. The gas companies would work with

¹https://www.montgomeryschoolsmd.org/siteassets/district/departments/facilities/sustainability/geothermal_green-features.pdf

² <https://www.nytimes.com/2024/01/23/climate/geoexchange-climate-colleges-heat.html?searchResultPosition=2>;

³ Maryland would not be the first state to pilot thermal energy networked systems using geothermal heat pumps. Colorado, Massachusetts, Minnesota and New York [have passed laws](#) that allow or mandate gas utilities to undertake thermal energy network pilot projects. Illinois, Maine, Vermont and Washington are exploring similar laws. <https://energynews.us/2024/01/18/new-york-will-replace-gas-pipelines-to-pump-clean-heat-into-buildings/>

community organizations and local governments to identify projects and would build and manage the projects approved by the state Public Service Commission (PSC). The pilot projects would have to be in neighborhoods with at least 80% low- and moderate-income residents, with priority given to overburdened and underserved communities. The gas companies would need to seek federal funding for their pilots and propose a rate structure ensuring that participating customers do not pay more for utilities than if they had not participated. The gas companies would also need to collect data to help the state evaluate the pilot program.

Because HB397 enables low- and moderate-income residents to replace gas appliances with GHPs and other efficient electric appliances at no cost to themselves, it protects them from bearing the increasing costs of stranded assets, *i.e.*, gas infrastructure that would serve fewer users as more consumers shift from gas to electricity and the economy becomes decarbonized.⁴ SB570 would also protect the jobs, wages and benefits of gas company workers who could use their skills to install and service the pipelines needed by the geothermal heat pump system and would promote use of workers and small businesses in the impacted area to implement some of the changes required within buildings. And, to the extent that behind-the-meter energy conservation upgrades and substitution of highly efficient electric appliances reduce the demand for electricity, SB570 would reduce the need for costly upgrades to the electric grid.⁵

Because of the promise of significant reductions in the use of natural gas and electricity, an equitable transition for gas companies and their workers, provisions to support impacted residents and businesses, and the potential to reduce the need for investments in the electric grid, I urge a **FAVORABLE** report for HB397 in committee.

⁴ Decarbonizing the economy implies significantly reducing use of methane gas. By 2045, *i.e.*, in 21 years, most existing gas pipeline infrastructure becomes a stranded asset.

⁵ US Department of Energy [research has found](#) that installing geothermal heat pumps in nearly 80 percent of U.S. homes could reduce the costs of decarbonizing the grid by 30 percent and avoid the need for 24,500 miles of new transmission lines by 2050.

Nature Forward -HB397 - FAV .pdf

Uploaded by: Denisse Guitarra

Position: FAV

February 20, 2024,

Written testimony for HB397 - Public Utilities - Thermal Energy Network Systems - Authorization and Establishment (Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act))¹

Position: Favorable

Submitted by: Denisse Guitarra, MD Conservation Advocate, Nature Forward



Dear Members of the House Economic Matters Committee,

Nature Forward is the oldest independent environmental organization in the DC metropolitan region. For 126 years, Nature Forward has inspired residents of the greater Washington, DC, area to appreciate, understand, and protect their natural environment through environmental education, advocacy, and outdoor experiences. In our conservation advocacy we prioritize human health & access to nature, biodiversity & habitats, fighting the climate crisis, and sustainable land use. We strongly support passage of **HB397 (WARMTH) Act**.

The recently published “Maryland’s Climate Pollution Reduction Report” states that the buildings sector is the largest consumer of electricity in the state of Maryland.² By enacting HB397, Maryland will tackle and reduce one of its largest sectors currently producing the largest number of greenhouse gas emissions. This bill will also be aligned and with and help Maryland reach its climate reduction goal of reducing greenhouse gases by 60% of its 2006

¹ Available at: <https://mgaleg.maryland.gov/mgawebsite/Legislation/Details/HB0397?ys=2024RS>

² Maryland’s Climate Pollution Reduction Report. Dec 2023. Page 34. Available at: <https://mde.maryland.gov/programs/air/ClimateChange/Maryland%20Climate%20Reduction%20Plan/Maryland%27s%20Climate%20Pollution%20Reduction%20Plan%20-%20Final%20-%20Dec%2028%202023.pdf>



levels by 2031 and 100% by 2035.³ By increasing geothermal energy, we would also be electrifying the grid, Maryland will lead the way towards relying the use of fossil fuels and instead focus on using clean renewable energy.

Furthermore, HB397 if enacted, will designate money from the Inflation Reduction Act to install running, networked geothermal systems to heat and cool buildings and homes in target low- and moderate-income homes and under-resourced communities. This will then mean that we will be able to fill the climate gap and make clean energy sources like geothermal energy more available to more people especially those that cannot afford the expensive clean energy transition. Additionally, this bill will help start a pilot to electrify low-income homes so that they are no longer reliant on gas.

HB397 merits support because it makes use of the now available IRA funds to ensure and establish greater access to geothermal energy which is a renewable source of energy. On behalf of Nature Forward and our 28,000 members and supporters, we recommend that the Committee **SUPPORTS HB397**. Thank you for your time and consideration.

Sincerely,

Denisse Guitarra

MD Conservation Advocate

Nature Forward

³ Maryland's Climate Change Program. Available at:
<https://mde.maryland.gov/programs/air/ClimateChange/Pages/index.aspx>

CLPP testimony HB397 Geothermal.pdf

Uploaded by: Donald M. Goldberg

Position: FAV

Committees: Economic Matters

**Testimony on: HB0397 Public Utilities – Thermal Energy Network Systems –
Authorization and Establishment – (Working for Accessible
Renewable Maryland Thermal Heat (WARMTH) Act)**

Organization: Climate Law & Policy Project

Submitted by: Donald M. Goldberg, Executive Director

Position: Favorable

Hearing Date: February 22, 2024

Climate Law & Policy Project strongly supports HB0397.

Decarbonization of Maryland’s building stock is a vital part of the state’s climate efforts, and networked geothermal systems provide an exciting and promising opportunity to help accomplish that task. Networked geothermal systems can provide 24/7/365 renewable, non-emitting heating and cooling to buildings. They also provide an avenue for natural gas utilities’ workforce to apply much of their existing skill sets and expertise in ways that accelerate decarbonization. Requiring each gas company in the state to undertake one or two pilot projects is a good way to ensure these companies gain the knowledge and experience needed to potentially expand deployment of this promising technology.

Another important aspect of this bill is its requirement that gas company pilot proposals ensure that 80% of the customers are from low- or moderate-income (LMI) housing. As more buildings electrify, there will be fewer remaining on gas heat, and those who remain will be responsible for bearing the cost of maintaining the gas system infrastructure. Without concerted efforts, it will likely be the more well-off homes and buildings that make the investments to switch to non-emitting heating options, leaving those with the greatest energy burdens and least financial ability with the escalating costs of the gas system. Focusing the networked geothermal pilot projects on LMI customers can be one important part of helping them avoid bearing the burdensome costs of gas infrastructure.

CLPP urges this Committee to issue a favorable report on HB0397.

HB 397 - Public Utilities – Thermal Energy Network

Uploaded by: Donna Edwards

Position: FAV



MARYLAND STATE & D.C. AFL-CIO

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**HB 397 - Public Utilities – Thermal Energy Network Systems – Authorization and Establishment
(Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act)
House Economic Matters Committee
February 22, 2024**

SUPPORT

**Donna S. Edwards
President
Maryland State and DC AFL-CIO**

Chairman and members of the Committee, thank you for the opportunity to provide testimony in support of HB 397. My name is Donna S. Edwards, and I am the President of the Maryland State and DC AFL-CIO. On behalf of the 300,000 union members in the state of Maryland, I offer the following comments.

HB 397 creates a pilot program for rolling out networked geothermal heating and cooling systems in Maryland while structuring the program in a way to provide maximum economic benefits to the state, ratepayers, and workers. HB 397 requires gas companies operating in Maryland to begin plans on at least one pilot project, by October 1, 2024, for networked geothermal in partnership with local governments and community organizations. HB 397 includes labor standards that maximize opportunities for receiving federal tax credits under the Clean Energy Financing Program and Greenhouse Gas Reduction Fund from the Inflation Reduction Act of 2022. HB 397 takes tangible steps towards experimenting with new opportunities for clean energy while utilizing the state's existing skilled workforce and a pipeline of new skilled tradespeople through apprenticeship opportunities.

Networked geothermal projects use the benefits of geothermal heating and cooling systems, where ground source heat pumps and boreholes transfer thermal energy into or out of buildings, and the cost savings from economies of scale. This means that networked geothermal energy projects benefit dozens of families or whole neighborhoods instead of requiring a piecemeal house by house rollout. Eversource, an energy and gas utility in New England, began constructing their 37 building pilot program in Framingham, Massachusetts last year.¹

Through community benefit agreements for qualified contractors and work done with the Maryland Environmental Service, Maryland can gain the full advantages of these projects, with jobs going to local residents, apprenticeship training opportunities, and timely completion of projects. New pilot projects will create magnitudes more good paying, high quality climate jobs. Ratepayers will be investing directly into Maryland's economy.

¹ Nicole Garcia. "A new geothermal project in Framingham may be the future of home heating." WGBH. July 26, 2023.

Maryland's fragile grid needs geothermal energy. By using geothermal energy and heat pumps, it prevents the full electrical load of heating and cooling from falling directly onto the grid. Our state's approach to transitioning away from fossil fuels should be building abundant clean and renewable energy sources, not to continuously subsidize the high energy bills of a larger and larger share of Maryland's residents. Maryland Matters reported that, "A study on SEIF funds for FY 21 showed that 52% of the proceeds went to energy bill assistance programs in Maryland, whereas for the RGGI states overall just 15% of the funding went to bill assistance. In Maryland, 20.5% of the funds went to energy efficiency programs, compared to 54% of funding going to energy efficiency in all the RGGI states collectively." With HB 397 we have an opportunity to directly incentivize new energy creation and decrease the number of workers that need energy subsidies by requiring quality job standards.

We urge a favorable report on HB 397.

Network Geothermal_Written Testimony_CCAN.pdf

Uploaded by: Ernesto Villasenor

Position: FAV

Committee: Economic Matters

Testimony: Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act

Position: Favorable

Hearing Date: February 22, 2024

Ernesto Villasenor, Jr., J.D

Chesapeake Climate Action Network Action Fund

On behalf of the Chesapeake Climate Action Network Action Fund, we stand in strong support of the Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act (HB 0397/SB 0570), which aims to establish pilot thermal energy network systems in Maryland. This bill presents a proactive approach to addressing our energy needs while promoting sustainability and environmental responsibility.

The proposal outlined in this bill requires each gas company to develop a plan for a pilot thermal energy network system within a specified timeframe. Additionally, it mandates that gas companies submit proposals to the Public Service Commission for approval, providing a structured framework for the implementation of these systems.

BACKGROUND

Geothermal heat pumps offer an innovative solution for heating and cooling buildings by harnessing the stable temperatures found beneath the earth's surface. While air temperatures above ground fluctuate throughout the day and across seasons, the earth's temperature just 10 feet below remains consistently between 50°F and 60°F. Leveraging this stable thermal resource, geothermal heat pumps transfer heat from the ground or water into buildings during colder months and reverse the process to cool buildings during warmer months.¹

According to the Environmental Protection Agency (EPA), geothermal ground source heat pump systems are among the most energy-efficient, environmentally friendly, and cost-effective ways to condition indoor spaces. Approximately 70 percent of the energy used by these systems is derived from renewable sources in the ground. Compared to conventional heating and cooling methods, high-efficiency geothermal systems boast impressive efficiency gains. On average,

¹ US Energy Information Administration, Geothermal explained - geothermal heat pumps.
<https://www.eia.gov/energyexplained/geothermal/geothermal-heat-pumps.php>

they are 48 percent more efficient than gas furnaces, 75 percent more efficient than oil furnaces, and 43 percent more efficient when cooling.²

One of the key advantages of geothermal heat pump systems is their minimal environmental impact.³ Since they do not burn fossil fuels on-site for heating, they produce significantly fewer greenhouse gas emissions compared to traditional furnaces. Additionally, they eliminate the risk of carbon monoxide poisoning within buildings. Even when factoring in emissions from the power plants that supply electricity to operate these systems, total emissions remain substantially lower than those associated with conventional heating and cooling methods.

IMPACT TO UNDERSERVED COMMUNITIES

One of the key strengths of this bill is its inclusivity. It allows municipal corporations, counties, and community organizations to nominate neighborhoods for consideration as part of a pilot system. This collaborative approach ensures that diverse communities across Maryland have the opportunity to benefit from the advantages of thermal energy networks.

Furthermore, the bill establishes clear requirements and authorizations for the development and implementation of these systems, providing a roadmap for successful execution. It also mandates that the Public Service Commission make determinations regarding the permanent establishment of pilot systems, ensuring accountability and transparency in the decision-making process.

Importantly, this bill allocates funding to cover certain costs associated with the pilot systems, demonstrating a commitment to supporting innovation in sustainable energy solutions. Additionally, it requires coordination between the Maryland Energy Administration and the Department of Housing and Community Development to provide necessary services and funding, further enhancing the effectiveness of these initiatives.

Moreover, by involving the Maryland Environmental Service in issuing procurements for certain projects and establishing employment requirements for designated projects, this bill not only promotes environmental stewardship but also creates opportunities for economic growth and job creation in our state. This is achieved through the "Community Benefit Agreement" provision, which is crucial as it defines an agreement applicable to the construction of any thermal energy network system and accompanying residential electrification, and it ensures the following:

² Space Conditioning: The Next Frontier, the Potential of Advanced Residential Space Conditioning Technologies for Reducing Pollution and Saving Consumers Money

³ Mock, J. E., Tester, J. W., & Wright, P. M. (1997). Geothermal energy from the earth: its potential impact as an environmentally sustainable resource. *Annual review of Energy and the Environment*, 22(1), 305-356.

- Increased opportunities for local businesses, including small, minority, women-owned, and veteran-owned businesses within the clean energy industry. This not only fosters economic growth but also encourages diversity and equity within the sector.
- Timely, safe, and efficient completion of projects by facilitating a steady supply of highly skilled craft workers. By mandating that these workers are paid not less than the prevailing wage rate, promoting fair compensation and stability in the workforce.
- Emphasizes career training opportunities in the manufacturing, maintenance, and construction industries for local residents, veterans, women, minorities, and formerly incarcerated individuals.
- Underscores the importance of local hiring and the hiring of historically disadvantaged groups, reflecting a 21st-century labor-management approach based on cooperation, harmony, and partnership.
- Encourages the use of locally, sustainably, and domestically manufactured construction materials and components whenever possible. This not only supports local economies but also promotes environmental sustainability.

In summary, House Bill 397 represents a significant step forward in advancing the adoption of thermal energy network systems in Maryland. By supporting this legislation, we have the opportunity to embrace cleaner and more efficient energy solutions, strengthen our communities, and protect our environment for future generations.

Thank you for considering my testimony in support of this important bill. I urge you to vote favorably on House Bill 397 and help pave the way for a more sustainable energy future in Maryland.

Sincerely,

CONTACT
Ernesto Villaseñor, Jr., JD | Policy Manager
Chesapeake Climate Action Network Action Fund
ernesto@chesapeakeclimate.org
310-465-6943

HB397_Favorable_PSC.pdf

Uploaded by: Frederick Hoover

Position: FAV

FREDERICK H. HOOVER, JR.
CHAIR

MICHAEL T. RICHARD
ANTHONY J. O'DONNELL
KUMAR P. BARVE
BONNIE A. SUCHMAN



PUBLIC SERVICE COMMISSION

February 20, 2024

Chair C.T. Wilson
Economic Matters Committee
Room 231 House Office Building
Annapolis, MD 21401

RE: HB 397 – Favorable - Public Utilities – Thermal Energy Network Systems – Authorization and Establishment (Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act)

Dear Chair Wilson and Committee Members:

HB397 proposes to establish a program in Maryland which explores whether heat pump technology could be used in combination with a utility-owned network of heat exchange pipes to provide a cost-effective alternative to natural gas service or an alternative form of electrification. As proposed, each gas company, using community input, would propose to the PSC, one or more demonstration projects to examine whether this technology could achieve environmental, social, and economic goals as a substitute for natural gas distribution systems. The purpose of the pilot program would examine if such a utility-owned system is in the public interest. There are numerous areas of investigation, including the applicability of geothermal systems to distinct types of housing, e.g., single family, or multi-family buildings, and a series of required community benefits.

If the legislation is enacted, the Public Service Commission anticipates the need for consulting services, as envisioned in the proposed legislation at PUA§7-1006, and will require two additional employees. These needs are driven by timelines within the legislation and to establish in-house expertise for the pilots and the permanent programs, if approved.

Section 7-1002(b)(6)(v) requires that the gas companies determine how the pilot system avoids costs for electric distribution and transmission systems that would otherwise occur with electrification using air-source heat pumps. Gas companies may not have access to the data needed to estimate avoided costs. Electric companies may have data that would enable estimates to be developed, but making use of that data would require gas companies to coordinate with electric companies in a new manner. Participating gas companies must be prepared to coordinate with their electric utility counterparts to ensure a successful pilot program.

As has been demonstrated in other energy pilot programs coordinated by the Public Service Commission, community engagement is a critical component of a successful pilot program. In

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Massachusetts, community groups were the genesis for the development of that State's programs. Because the installation of a thermal energy network system will require the coordination and cooperation of many citizens, a strong community commitment will be vital to the success of a pilot program. The language of HB 397 emphasizes that importance.

The thermal energy network systems to be developed after the enactment of HB 397 have the potential to make great progress towards the attainment of the State's climate goals. The State will be able to look to other jurisdictions already standing up these projects and gain critical knowledge. The Public Service Commission will have an important role in determining the viability and prudence of these projects and the impacts of them on the ratepayers of Maryland. I request a favorable report on HB 397. Please direct any questions to Christina Ochoa, Director of Legislative Affairs, at christina.ochoa1@maryland.gov

Sincerely,



Frederick H. Hoover, Chair
Maryland Public Service Commission

HB 397 - MoCo DEP - Fitzgerald_FAV (GA 24).pdf

Uploaded by: Garrett Fitzgerald

Position: FAV



Montgomery County

Office of Intergovernmental Relations

ROCKVILLE: 240-777-6550

ANNAPOLIS: 240-777-8270

HB 397

DATE: February 20, 2024

SPONSOR: Delegate Charkoudian

ASSIGNED TO: Economic Matters Committee

CONTACT PERSON: Garrett Fitzgerald (garrett.fitzgerald@montgomerycountymd.gov)

POSITION: Favorable (Department of Environmental Protection)

Public Utilities – Thermal Energy Network Systems – Authorization and Establishment (Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act)

This legislation meets a critical need in our work to reduce climate pollution in a manner that is safe, healthy, and cost-effective for Maryland residents.

This bill would require each gas utility company to develop and submit to the Maryland Public Service Commission (PSC) a plan to pilot an alternative approach to provide heating services to customers without burning natural gas. The PSC will review these plans for cost-effectiveness and authorize appropriate pilots. The bill establishes requirements to ensure that projects are constructed with fair labor standards and primarily benefit low-to-moderate income residents.

Networked geothermal heating systems may represent a critical opportunity for gas utilities to maintain their status as providers of heating services while playing a key role in Maryland's clean energy transition away from fossil fuel combustion. The pilot project planning and implementation envisioned by this bill would offer a valuable learning opportunity for the utilities, PSC, and other stakeholders about the potential for networked geothermal projects to play a key role in that transition. Importantly, while aspects of these networked energy systems will require some learning by the gas utilities, the technology involved is well-established, and participating pilot neighborhoods will benefit.

Montgomery County appreciates that the bill authorizes counties and community organizations to suggest pilot areas, and that funding would be provided to enable community organizations to support project planning. Participants would not be on the hook to pay for the equipment and would not experience an increase in utility rates. The bill would allow community members the option to opt out of participating in the pilot.

We support this innovative concept, and respectfully request that the Economic Matters Committee issue a favorable report for House Bill 397.

HB397 WARMTH.pdf

Uploaded by: Gerald Jackson

Position: FAV



PLUMBERS AND STEAMFITTERS

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Business Agent

Stephen M. Nitsch
Business Agent

Todd E. Eckley
Recruiter

Economic Matters Committee

To: Chairman Wilson, Vice Chair Crosby, and Committee Members

Position: Support HB397

My name is Gerald Jackson. I am the Assistant Business Manager for Plumbers & Steamfitter's Local union 486 representing **2500** members, I am also the Secretary- Treasurer for the Maryland State and D.C. AFLCIO representing **300,000** workers and I am a board member for the Maryland Climate Change Commission.

I strongly support **HB397**.

As a Steamfitter who has worker in the construction industry for 43 years, I have seen the decimation of the fossil fuel energy sector. A large portion of our work has transitioned to "Clean Energy" and we are ready to accept the challenge. Geo-Thermal Energy is a sensible option for heating and cooling that eliminates Carbon Emissions. With a mandate to attain full electrification by 2041, which I personally believe is un-attainable, Geothermal Energy is needed to achieve the goals set by the state of Maryland. **HB397** provides a detail plan that Includes language for safe installation, labor peace, MBE participation and Labor Standards which help to facilitate the good paying jobs lost as a result of the emergence of the "Green Energy Sector". We need legislation that promotes good paying jobs, apprenticeship training and a pathway to the middle class.

This is common sense legislation that I believe we all can agree with.

For these reasons I'm asking for a favorable report for HB397.

Respectfully Submitted

Gerald W. Jackson

Assistant Business Manager Plumbers & Steamfitter's Local 486

Secretary- Treasurer Md. State & D.C. AFL-CIO

WARMTH Act House Testimony.pdf

Uploaded by: Jamal Lewis

Position: FAV

February 22, 2024

Honorable C.T. Wilson, Chair
Economic Matters Committee
Room 231
House Office Building
Annapolis, Maryland 21401

Re: HB 0397, Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act

Dear Chair Wilson and Members of the Economic Matters Committee:

Good afternoon Chair Wilson and committee members, for the record, my name is Jamal Lewis, and I am a Director of Implementation Learning and Integration for Rewiring America, the leading electrification nonprofit working to help families and communities achieve energy efficiency, improve health, and save money while tackling nationwide emission goals by swapping out inefficient fossil fuel appliances for clean electric alternatives. I'm also writing to you today as a member of the Maryland Commission on Climate Change (MCCC) Mitigation Working Group (MWG). Thank you for the opportunity to provide testimony. Today, we urge a favorable report on HB0397, which would promote better, more efficient, and more sustainable buildings in Maryland.

Thanks to the efforts of the General Assembly, we have a nation-leading requirement to reduce our state's greenhouse gas (GHG) emissions by 60% by 2031 and achieve net-zero emissions by 2045. Electrification is essential to achieving these climate goals, as underscored by Maryland's Climate Pathway Report which supports a zero-emission appliance standard for space and water heating, a zero-emissions construction standard for all new residential and commercial buildings, and strengthened energy efficiency standards. This plan will rapidly accelerate the pace of residential and commercial building electrification in the state so that by 2045 electricity accounts for 83% and 94% of the total energy consumption in residential and commercial buildings, respectively.

To hit the pace of residential electrification outlined in the Climate Pathway Report, we must invest in the clean, electric machines available on the market today. When it comes to space and water heating and cooling, heat pumps are the gold standard. Heat pumps are 2-4x more energy-efficient than gas furnaces and do not emit any of the harmful onsite pollutants their fossil fuel counterparts do. In particular, geothermal heat pumps are the most efficient space heating appliance, produce the least amount of GHG emissions, and generate the most energy savings. [Geothermal heat pumps use half as much energy as air-source heat pumps \(ASHPs\) and just 15-25 percent of the energy of gas furnaces. Similarly, total emissions from the electricity used to power geothermal heat pumps are just 15-30 percent of gas furnaces](#). In addition, the efficiency of geothermal heat pumps, especially when connected to a networked system, can maximize energy bill savings for homeowners by minimizing peak energy demands and preventing investments in expensive energy generation.

Energy peaks represent the most amount of energy demand over the course of a time period and occur most often in the winter and summer due to heating and cooling needs. Energy peaks are not efficient for the system since costly energy is deployed to meet the additional demand. It is more efficient for the amount of power generation to be relatively level at all times of day/year because that means the same lower cost power generators like solar and wind power can be used all year without additional costly power. If the peak demand is much higher than the average demand, typically new generation is only needed for a relatively short period of time, meaning that we are building and deploying really costly energy, which is then passed down to ratepayers on their bills. Geothermal heating and cooling is able to level the demand during summer and winter peak periods because the ground temperature is relatively level, meaning that it doesn't take as much energy to heat and cool.

Though the benefits are immense, these technologies can be more difficult to access given the high upfront costs. Still, these technologies are well worth the investment. A [recent DOE study](#) found that widespread deployment of geothermal system heat pumps can lead to \$1 trillion in savings for electricity grid services, \$19 billion per year in consumer heating bill savings, 11-13 percent less electricity generation needed, 33-38 percent less electricity transmission expansion needed, and 24,500-43,500 miles of avoided transmission investments, nationally.

As we push to electrify everything in Maryland, it is critical that we are maximizing emissions reduction while also minimizing energy costs, especially for low-and-moderate income households in the state [who pay an average of 14% of their income on energy costs \(compared to the 12% average statewide\)](#). If passed, HB 0397 will require that 80% of the networked geothermal pilot participants are low and moderate income households and ensure that no participant pays more for utilities as a result of the pilot. prioritizes low and moderate income households. We urge a favorable report on HB0397 and help Maryland communities move closer to a more resilient, healthier, and cleaner future. I am available for any questions.

Thank you,



Jamal Lewis

Director of Implementation Learning & Integration
Rewiring America

Jason Ascher - Support - HB 397.pdf

Uploaded by: Jason Ascher

Position: FAV



House Economic Matters Committee

To: Delegate CT Wilson, Chair; Delegate Brian Crosby, Vice-Chair; and Members of the Committee.
From: Jason Ascher, Political Director, Mid-Atlantic Pipe Trades Association.

SUPPORT HB 397 – Public Utilities – Thermal Energy Network Systems – Authorization and Establishment

On behalf of the Mid-Atlantic Pipe Trades Association and our five United Association of Plumbers and Steamfitters Locals, which represent 10,000+ Plumbers, Steamfitter, Welders, HVAC Techs, and Sprinkler Fitters across Maryland, I ask you to **SUPPORT HB 397**.

The United Association, as an organization, believes in an “all of the above” energy policy. We must ensure energy is available for public consumption regardless of outside conditions. In a time when most items we use daily, like computers and cell phones, need constant power, limiting the type of energy we can create would be foolish. But that is precisely what is happening across Maryland and the country. While trying to push people to use electric cars and fully electric homes, we are also telling them we will only allow electricity from wind and solar. No Gas, No Nuclear, and certainly no coal or oil. All these types of energy production would create the biggest baseload we are told we cannot use. While we disagree with the complete elimination of the use of fossil fuels in energy production, Geothermal would be an excellent tool to add to the toolbox.

This transition away from fossil fuels also creates a different problem because the Fossil Fuels and Nuclear industries create good-paying careers, while wind and solar typically do not. Workers in the fossil fuel sector usually work in some form of pipe fitting, which doesn't translate to the wind and solar industry. **HB 397** adds another energy source to the tool kit by creating a pilot project on community geothermal energy. Geothermal piping systems are built and maintained like gas piping systems and would provide some work for fossil fuel workers whose jobs are disappearing. The labor protections will ensure that workers on these geothermal projects get trained for a good career building these and other piping systems.

For the reason stated above, please **SUPPORT HB 397**.

Sincerely,

Jason Ascher
Political Director
Mid-Atlantic Pipe Trades Association

MID-ATLANTIC PIPE TRADES ASSOCIATION



PLUMBERS - STEAMFITTERS - SPRINKLER FITTERS
PIPE FITTERS - PIPE WELDERS - HVAC SERVICE TECH

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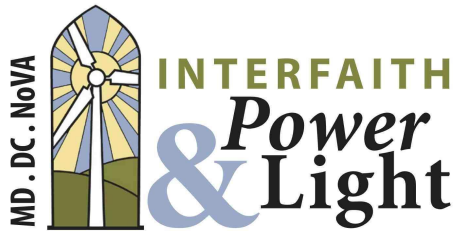
Plumbers and Gasfitter Local 5 – Camp Springs, MD
Plumbers and Steamfitters Local 10 – Richmond, VA/Roanoke, VA
Plumbers and Pipefitters Local 110 – Norfolk, VA
Road Sprinkler Fitters Local 669 – Columbia, MD

Plumbers and Steamfitters Local 486 – Baltimore, MD
Plumbers and Steamfitters Local 489 – Cumberland, MD
Steamfitters Local 602 – Capitol Heights, MD

IPL-DMV Testimony for WARMTH Act FAVORABLE.pdf

Uploaded by: Joelle Novey

Position: FAV



**Testimony Supporting HB 397
House Economic Matters Committee
February 22, 2024**

Position: Favorable

Dear Chair Wilson, Vice Chair Crosby, and Members of the Committee,

Interfaith Power & Light (DC.MD.NoVa) is a grassroots organization working directly with religious communities of many faiths as we respond to the climate crisis. In Maryland, our organization has relationships with over 900 congregations across the state. We are called by our different faith traditions to use our voice in protection of our common home.

Our breath connects us to each other and to life. Our faith communities understand that our breath is for singing praise — not for breathing smoke and pollution. This session we are using our breath to speak out for a safer, cleaner, and more efficient future. **We respectfully request a favorable report on HB 397, the Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act.**

The WARMTH Act would create pilot projects of super-efficient and reliable neighborhood geothermal systems while maximizing on incoming federal funds and existing infrastructure. Network geothermal unlocks dramatic energy efficiency improvements by having multiple homes and buildings working together. The rights of way already have conduits for gas pipes that are ready and available for network geothermal pipes.

The pilot projects created by this bill will be aimed at equitable and just electrification by requiring they be in neighborhoods with 80% low- and moderate-income residents. As we work towards the state's climate goals to reduce gas emissions, we must ensure that overburdened and underserved communities are being prioritized by minimizing cost barriers to healthier homes. The technology behind neighborhood geothermal heating is efficient, reliable, and can be constructed today. This is an already proven, carbon-free technology that will minimize additional electric demand on the grid.

This bill will ensure that family-sustaining jobs for current workers continue. Labor standards in this bill prioritize maintaining work for those who work on gas infrastructure and ensure prevailing wages for construction on the projects. Because geothermal work is similar to gas distribution work, minimal additional training ensures job security. We welcome the several unions supporting this bill, and affirm the need to ensure job security for gas system workers in a new clean thermal energy future.

The WARMTH Act aligns with the state's aggressive climate action plans. Maryland has a statutory requirement to reduce gas emissions to 60% of 2006 by 2031 and the state is further required to transition to a net-zero status by 2045. Meeting these targets is imperative to sustaining our common home and caring for our neighbors.

Our faith communities across the state are already working together to care for our common home and neighbors, for this reason **Interfaith Power & Light (D.C.MD.NoVa) respectfully requests a favorable report on HB 397, the Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act.**



We are documenting the harms of burning gas in our homes.

For well over a year, we and our partners at Action in Montgomery have been testing nitrogen oxide levels in gas-burning kitchens in homes across Montgomery County, particularly in low and moderate-income high-rise buildings such as The Enclave in White Oak and Cider Mill Apartments in Gaithersburg.

Over and over again, we find that when their stoves are on, many Marylanders are routinely exposed to levels of nitrogen oxide indoors exceed the EPA's outdoor standard, raising concerns about asthma and the many other respiratory problems exacerbated by gas stove pollution.

So many Maryland families are eager to electrify at home for the health of their loved ones and protecting the climate.

On December 5th, Ana Argueta and Lorena Joya delivered the following remarks (in Spanish) at Good Hope United Methodist Church in Silver Spring before a gathering of nearly 400 Marylanders convened by Action in Montgomery, People Acting Together in Howard, Interfaith Power & Light (DC.MD.NoVA), and Maryland Sierra Club:



Good evening. I am Ana Argueta. I am a mom to three children and I have been organizing other parents and renters to improve our schools and our community. Good evening. I am Lorena Joya. I am a mother, part of the South Lake PTA, and Safe Places.

We are here for three reasons:

I have learned that using a gas stove I am poisoning my home and my lungs with NO₂. Using a gas stove and gas-powered HVAC, I am also contaminating the environment. Not using methane gas will avoid the risk of both explosions and pollution.

We took a video of doing the NO₂ testing at Ana's apartment. Let's watch: "Hello, I am Ana Argueta. I live in Silver Spring. This is my stove, which I turned on 20 minutes ago. This is an NO₂ meter. You can see that it is showing an NO₂ level of 434 parts per billion."

The U.S. Environmental Protection Agency says that outdoor levels of NO_x above 100 parts per billion are dangerous for our health. And what we measured inside my home was more than four times what the EPA says is healthy.

The NO₂ in my home is not unique. We have measured NO₂ levels in over 200 apartments and homes, and we have measured very high levels. I invite our guests to raise the papers with the NO₂ tests. The red papers are measurements we took [in homes in Montgomery County, Maryland] that were higher than what the EPA recommends for the outdoors.



Many children who live in older apartment buildings have asthma. NO₂ causes asthma and makes it worse and affects brain development. Other toxins from burning methane, or natural gas, cause cancer. We have other problems in our apartments like toxic mold, dirty AC filters, and a lack of ventilation. **Changing from gas appliances to appliances like electric induction stoves or electric heat pumps- could improve our health and the conditions of our apartments while also reducing greenhouse gasses and other pollutants.**



HB 397 WARMTH Act Written Testimony.pdf

Uploaded by: Justin Barry

Position: FAV



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February 20, 2024

Delegate C.T. Wilson, Chair
House Economic Matters Committee
House Office Building, Room 231
Annapolis, Maryland 21401

Re: **FAVORABLE** – HB397 – Public Utilities – Thermal Energy Network Systems –
Authorization and Establishment (Working for Accessible Renewable Maryland Thermal
Heat (WARMTH) Act)

Dear Chairman Wilson and Members of the Committee:

On behalf of the Green & Healthy Homes Initiative (GHHI), I submit for the record our testimony in support of HB397. GHHI is a 501(c)3 national nonprofit and headquartered in Baltimore, MD. Our mission is to address the social determinants of health, opportunity and racial and health equity through the creation of healthy, safe and climate resilient homes.

Piloting geothermal projects across the state that will achieve these goals will provide important clarity to how the state can achieve this vision and provide immediate benefits to the communities served through this initiative.

GHHI is the nation's lead authority on the benefits of a whole-house approach that aligns, braids and coordinates energy efficiency, health and safety to create an integrated home repair and retrofit delivery model to improve health, economic and social outcomes in line with the state's climate goals. The GHHI model has been supported by the US Department of Energy (DOE) and the US Department of Housing and Urban Development (HUD) as well as numerous states, cities and counties throughout the US. By delivering a standard of excellence, GHHI's work aims to eradicate the negative impact of historic disinvestment, the legacy of ill-conceived and unjust housing by creating holistically healthy housing for children, seniors and families in Maryland's low wealth communities. GHHI's work has been recognized through national best practice awards from the US Environmental Protection Agency (EPA) and HUD. In 2023, GHHI was awarded the Buildings Upgrade Prize award from the DOE in recognition of its proposed initiative to complete electrification of low-income households in East Baltimore through a community-driven, whole home initiative with health and safety, workforce, and efficiency benefits.

Impact of Fossil Fuel Appliances on Health

Growing evidence has highlighted the negative health impacts of fossil fuels from residential usage. In September 2023, GHH, CASA, CCAN, and RMI published the report *Cutting Through*

GHHI Written Testimony – House Bill 397
February 20, 2024
Page Two

*the Smog*¹ which highlighted that fossil fuel furnaces, HVAC systems, water heaters and other equipment emit more than three times as much health-harming nitrogen oxides as the Maryland's power plants. This disproportionately affects low-income residents and residents of color where pollution, environmental justice, and health issues are most likely to compound. The report highlights that outdoor pollution from fossil fuel equipment in Maryland caused an estimated 163 premature deaths in 2017 alone, driving about 3,500 cases of respiratory symptoms, 6,500 lost workdays, and \$1.3 billion in public health impacts per year. That is just based on outdoor air pollution.

Furthermore, just last week the EPA and National Academies released a consensus study report, *Health Risks of Indoor Exposure to Fine Particulate Matter and Practical Mitigation Solutions*². That report notes “natural gas combustion is a substantial source of UFPs [ultrafine particles]-, particularly if the particles are not properly exhausted above a stove or vented from appliances such as water heaters, dryers, or heating systems.” The report concludes, “There is ample evidence that exposure to indoor fine particulate matter causes adverse health effects.” These health impacts include respiratory effects, cardiovascular effects, neurological effects, and more.

Nitrogen oxides and fine particulate matter are just two of the major pollutants from fossil fuel combustion. Other pollutants include the carcinogen benzene, volatile organic compounds, and carbon monoxide. Moving to electric technologies such as electric heat pumps connected to geothermal systems eliminates the source exposure of fossil fuel combustion and toxic gas leakage from furnaces. A full electrification project further adds benefits from eliminating other sources of pollution including water heaters, stoves, dryers, and more.

Importance of Energy Affordability in Low-Income Households

This pilot can play a key role in advancing energy affordability in the state of Maryland. Geothermal heat pumps are one of the most efficient heating technologies available today. According to the EPA, geothermal heat pumps can reduce energy consumption up to 44% compared with air source heat pumps and up to 72% compared with electric resistance heating with standard air-conditioning equipment. They maximize the high efficiency of heat pump technologies while minimizing efficiency losses during colder temperatures thanks to the ground-sourced thermal energy.

In the Brattle Study on the electrical distribution systems submitted to the General Assembly this past December, ground source heat pumps are noted as the technology with the lowest per-

¹ CASA, Green & Healthy Homes Initiative, Chesapeake Climate Action Network, and RMI, *Cutting Through the Smog: How Air Quality Standards Help Solve the Hidden Health Toll of Air Pollution From Maryland's Homes and Businesses* (September 2023), available at <https://www.greenandhealthyhomes.org/publication/cutting-through-the-smog/>

² National Academies of Sciences, Engineering, and Medicine. 2024. *Health Risks of Indoor Exposure to Fine Particulate Matter and Practical Mitigation Solutions*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/27341>

GHHI Written Testimony – House Bill 397

February 20, 2024

Page Three

customer electrification peak impact—even lower than the impact of hypothetical air source heat pump with fossil fuel-back-up equipment³. This efficiency during peak demand has the dual benefit of reducing energy costs to the household (thus reducing energy burden), while also minimizing the demand on the electrical distribution system (thus reducing the need for increased capacity and electrical generation).

Reducing demand on the electrical distribution system will reduce infrastructure costs that often are borne by ratepayers. Given the already high statewide energy burdens (the percentage of household income used to pay for utility costs) and the expected rise in gas infrastructure costs from STRIDE, minimizing electric infrastructure costs is an especially important equity priority. GHHI is the lead facilitator of the Maryland Energy Efficiency Advocates (MEEA) coalition that participates in the EmPOWER proceedings and various PSC and DHCD workgroups. In those spaces, MEEA and others have consistently raised concerns about how energy cost burdens create inequities for low-income communities, and disproportionate burdens on communities of color. In our recent comments to the PSC on Limited Income Mechanism for Utility Customers (Public Conference 59), we noted that Marylanders with incomes 185% – 200% of the Federal Poverty Level had energy burdens of 8%.⁴ Another analysis of residential energy affordability found that around 400,000 Marylanders have an energy burden over 6%, which is the threshold researchers use to define high burden.⁵ Maximizing energy efficiency both in energy burdened homes and system wide, as this pilot will support, is essential to an equitable transition to Maryland's clean energy future.

Benefits of Weatherization and Housing Interventions Pre-Electrification

In completing this pilot, the initiative will deliver layered intentions that ensure homes are healthy, safe, energy efficient, and energy resilient. As noted earlier, GHHI has developed the holistic energy efficiency, health and housing service delivery model that is implemented in our nationally recognized, Maryland-based direct service program. The model was adopted by the US Department of Housing and Urban Development and is currently being advanced in partner jurisdictions nationally. The pilot will create an opportunity to deliver this model as homes are weatherized before electrification.

³ The Brattle Group, 2023. *An Assessment of Electrification Impacts on the Maryland Electric Grid*. Prepared for the Maryland Public Service Commission. Available at <https://www.psc.state.md.us/wp-content/uploads/Corrected-MDPSC-Electrification-Study-Report-2.pdf>

⁴ Fisher, Sheehan & Colton, *The Home Energy Affordability Gap 2022, Maryland (April 2023)*, available at <http://www.homeenergyaffordabilitygap.com/>.

⁵ Arjun Makhijani, et al, *Energy Affordability in Maryland: Integrating Public Health, Equity and Climate*, Executive Summary (Feb. 2023), available at https://www.psehealthyenergy.org/wp-content/uploads/2023/02/Energy-Affordability-in-Maryland-2023_-Final-Report-1.pdf.

GHHI Written Testimony – House Bill 397

February 20, 2024

Page Four

Studies for the US Department of Housing and Urban Development have shown the benefits of GHHI's whole house approach in Baltimore as follows:

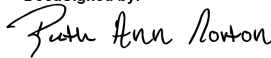
- 66% reduction in asthma related hospitalizations
- 62% increase in school attendance by addressing chronic absences due to asthma
- 88% increase in parental work attendance related directly to healthier children
- 30% reductions in asthma related ER visits
- 99% reductions in childhood lead poisoning
- Reductions in household injuries for children and trip and fall injuries for seniors
- Increased mobility and accessibility in the home for older adults who are able to Age in Place in the homes and communities where they choose to live
- Reductions in greenhouse gas emissions, energy consumption and overall energy costs.

Cost Savings and System Change

- Improved service delivery to low-income households and reductions in deferral rates from housing program services that clients are otherwise eligible to receive
- Program and government cost savings from efficiencies in implementing comprehensive assessment and housing intervention models utilizing cross-trained assessors and contractors
- Government innovation through the utilization of an integrated, comprehensive housing intervention model by state agencies that attracts new federal and philanthropic investment
- Reductions in medical costs including Medicaid costs
- Reductions in energy consumption and energy costs
- Reductions in housing maintenance costs

Between the federal government passing historic investments in climate, infrastructure, and housing through the Bipartisan Infrastructure Law and the Inflation Reduction Act, and the state of Maryland's leadership in climate commitments and planning, we are looking at a historic intersection of need, opportunity, and funding. Meeting this moment for climate, health, and equity will require innovative approaches and comprehensive solutions. This pilot program will help Maryland lead in the housing and energy transitions that are necessary to create a sustainable future. I urge the Committee to support the passage of H3B97.

Respectfully Submitted,

DocuSigned by:

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Ruth Ann Norton
President and CEO

Testimony HB397 Geothermal Networked Systems.pdf

Uploaded by: Karl Held

Position: FAV



CLIMATE COALITION
Montgomery County, MD

Committee: Economic Matters

Testimony on: HB397 –Public Utilities – Thermal Energy Network Systems – Authorization and Establishment -Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act

Organization: Climate Coalition Montgomery County

Submitting: Karl Held

Position: Favorable

Hearing Date: February 22, 2024

Dear Chair and Committee Members:

Thank you for allowing our testimony today in support of HB397. The Climate Coalition Montgomery County, a coalition of over 20 grassroots organizations focused on climate and environment urges you to vote favorably on HB397.

Maryland has committed to reducing greenhouse gas emissions (GHGs) to 60% of 2006 levels by 2031 and transitioning to a net-zero economy by 2045. Doing so will require major reductions in emissions arising from heating and cooling buildings.

Geothermal heating and cooling systems (ground source heat pumps or GHPs) generate significantly less GHGs than gas or electric resistance equipment and even less than air-source heat pumps. The [U.S. Department of Energy estimates](#) that GHPs “can reduce energy consumption and emissions up to 44% compared to air-source heat pumps and 72% compared to standard air-conditioning equipment.” GHPs require less energy than air-source heat pumps because, for both heating (including in water heaters) and cooling, GHPs use heat extracted from boreholes 300-500 feet below ground (50-60° F, year-round) rather than from the ambient air (typically, in Maryland, midwinter lows in the low- to mid-20s and mid-summer highs in the mid-to-upper 80s). The difference between geothermal and desired building temperatures is much smaller than the difference between ambient air and desired building temperatures.

Problem: While geothermal heat pumps are a well-tested technology,¹ and their use in districts, such as universities, is spreading,² their use in networked systems to heat small neighborhoods is more recent.³

¹https://www.montgomeryschoolsmd.org/siteassets/district/departments/facilities/sustainability/geothermal_green-features.pdf

² <https://www.nytimes.com/2024/01/23/climate/geoexchange-climate-colleges-heat.html?searchResultPosition=2;>

³ Maryland would not be the first state to pilot thermal energy networked systems using geothermal heat pumps. Colorado, Massachusetts, Minnesota and New York [have passed laws](#) that allow or mandate gas utilities to undertake thermal energy network pilot projects. Illinois, Maine, Vermont and Washington are exploring similar laws. <https://energynews.us/2024/01/18/new-york-will-replace-gas-pipelines-to-pump-clean-heat-into-buildings/>

Pilot projects can be useful to demonstrate proof of concept and identify program design improvements.

Solution: HB397 would create pilot projects and gather information to assess how well networked geothermal systems will work in different areas in Maryland.

Each natural gas utility would be required to develop one or two pilot thermal energy projects to replace gas infrastructure with a thermal energy network system. The gas companies would work with community organizations and local governments to identify projects and would build and manage the projects approved by the state Public Service Commission (PSC). The pilot projects would have to be in neighborhoods with at least 80% low- and moderate-income residents, with priority given to overburdened and underserved communities. The gas companies would need to seek federal funding for their pilots and propose a rate structure ensuring that participating customers do not pay more for utilities than if they had not participated. The gas companies would also need to collect data to help the state evaluate the pilot program.

Because HB397 enables low- and moderate-income residents to replace gas appliances with GHPs and other efficient electric appliances at no cost to themselves, it protects them from bearing the increasing costs of stranded assets, *i.e.*, gas infrastructure that would serve fewer users as more consumers shift from gas to electricity and the economy becomes decarbonized.⁴ SB570 would also protect the jobs, wages and benefits of gas company workers who could use their skills to install and service the pipelines needed by the geothermal heat pump system and would promote use of workers and small businesses in the impacted area to implement some of the changes required within buildings. And, to the extent that behind-the-meter energy conservation upgrades and substitution of highly efficient electric appliances reduce the demand for electricity, SB570 would reduce the need for costly upgrades to the electric grid.⁵

Because of the promise of significant reductions in the use of natural gas and electricity, an equitable transition for gas companies and their workers, provisions to support impacted residents and businesses, and the potential to reduce the need for investments in the electric grid, we recommend a **FAVORABLE** report for HB397 in committee.

The Climate Coalition Montgomery County

350 Montgomery County
ACQ Climate (Ask the Climate Question)
Bethesda Green
Biodiversity for a Livable Climate
Chesapeake Climate Action Network (CCAN)
Elders Climate Action
Environmental Justice Ministry Cedar Lane Unitarian Universalist Church
Friends of Sligo Creek (FoSC)

⁴ Decarbonizing the economy implies significantly reducing use of methane gas. By 2045, *i.e.*, in 21 years, most existing gas pipeline infrastructure becomes a stranded asset.

⁵ US Department of Energy [research has found](#) that installing geothermal heat pumps in nearly 80 percent of U.S. homes could reduce the costs of decarbonizing the grid by 30 percent and avoid the need for 24,500 miles of new transmission lines by 2050.

Green Sanctuary Committee of the Unitarian-Universalist Church of Silver Spring
Montgomery County Faith Alliance for Climate Solutions (MC-FACS)
Montgomery Countryside Alliance
One Montgomery Green
Poolesville Green
Transit Alternatives to Mid-County Highway Extended/M-83 (TAME)
The Climate Mobilization Montgomery County (TCM-MoCo)
Takoma Park Mobilization Environment Committee (TPMEC)
Zero Waste Montgomery County

HB0397- Working for Accessible Renewable Maryland

Uploaded by: Laurie McGilvray

Position: FAV



Committee: Economic Matters
Testimony on: HB0397-Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act
Organization: Maryland Legislative Coalition Climate Justice Wing
Submitting: Laurie McGilvray, Co-Chair
Position: Favorable
Hearing Date: February 22, 2024

Dear Chair and Committee Members:

Thank you for allowing our testimony today in support of HB0397. The Maryland Legislative Coalition (MLC) Climate Justice Wing, a statewide coalition of nearly 30 grassroots and professional organizations, urges you to vote favorably on HB0397.

Maryland has a statutory requirement to reduce greenhouse gas emissions to 60% of 2006 levels by 2031. Once this milestone is achieved, we are further required to transition to a net-zero economy by 2045. Meeting these targets is urgent and imperative, and both solar and wind projects are behind schedule in meeting those targets. Under the RPS, geothermal is listed as contributing only 1% of MD's energy needs compared with the 14.% for solar and 2.5% for wind. Maryland's path to achieving its GHG reduction goals is so narrow and has so many favorable (and perhaps unrealistic) assumptions that it really is important to overachieve in some areas. Networked geothermal systems are a super efficient, inflation resistant, reliable way to heat and cool buildings. These systems can be constructed today. They are an already proven, carbon-free technology. They minimize additional electric demand on the grid.

Geothermal heat pumps (GHPs) have been available since the 1940's, and are significantly more efficient than air-source heat pumps. The U.S. Department of Energy [estimates](#) that GHPs reduce energy consumption and emissions by up to 44% compared to air-source heat pumps and 72% compared to standard air-conditioning equipment. However, individual GHPs are significantly more expensive than other choices, though they can pay back that extra cost in 5 to 10 years. By networking a neighborhood, savings result from sharing the costs of the boreholes and also sharing waste heat generated in local businesses (primarily from refrigeration and other cooling required year-round, including data centers).

Problem: While geothermal heat pumps are a well-tested technology, and their use in districts, such as universities, is proliferating, their use in networked systems to heat small neighborhoods is more recent. Ensuring an equitable transition for residents and businesses in the impacted neighborhood and for affected gas utility workers also needs careful planning.

Solution: HB0397 would create pilot projects and gather experience and data to assess how well networked geothermal systems will work in different areas in Maryland.

Maryland would not be the first state to pilot thermal energy networked systems using geothermal heat pumps. Colorado, Massachusetts, Minnesota and New York have passed laws that allow or mandate gas utilities to undertake thermal energy network pilot projects. Illinois, Maine, Vermont and Washington are exploring similar laws.

For example, Eversource, a Massachusetts gas utility, is well-along to completing a networked [geothermal pilot in Framingham](#), consisting of 32 residential and 5 commercial buildings and 140 customers, including a community college, public housing authority, and a fire station.

Maryland should follow the lead of these forward-thinking states and implement a networked geothermal pilot program by passing HB0397. The MLC Climate Justice Wing strongly supports HB0397 and urges a **FAVORABLE** report in Committee.

350MoCo

Adat Shalom Climate Action

Cedar Lane Unitarian Universalist Church Environmental Justice Ministry

Chesapeake Earth Holders

Chesapeake Physicians for Social Responsibility

Climate Parents of Prince George's

Climate Reality Project

ClimateXChange – Rebuild Maryland Coalition

Coming Clean Network, Union of Concerned Scientists

DoTheMostGood Montgomery County

Echotopia

Elders Climate Action

Fix Maryland Rail

Glen Echo Heights Mobilization

Greenbelt Climate Action Network

HoCoClimateAction

IndivisibleHoCoMD

Maryland Legislative Coalition

Mobilize Frederick

Montgomery County Faith Alliance for Climate Solutions

Montgomery Countryside Alliance

Mountain Maryland Movement

Nuclear Information & Resource Service

Progressive Maryland

Safe & Healthy Playing Fields

Takoma Park Mobilization Environment Committee

The Climate Mobilization MoCo Chapter

Unitarian Universalist Legislative Ministry of Maryland

WISE

Networked Geothermal Factsheet.docx .pdf

Uploaded by: Lorig Charkoudian

Position: FAV

HB 397

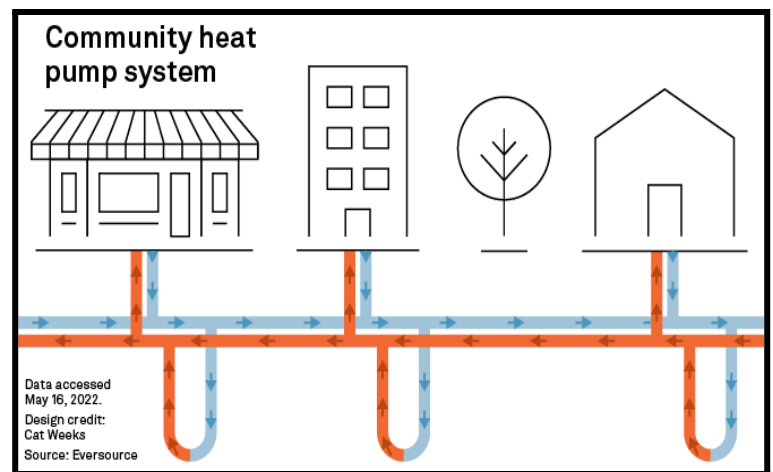
Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act Neighborhood Geothermal

Maryland has a statutory requirement to reduce greenhouse gas emissions to 60% of 2006 levels by 2031. Once this milestone is achieved, we are further required to transition to a net-zero economy by 2045. Meeting these targets is urgent and imperative. The transition to a carbon-free economy provides benefits to public health and opportunities to invest in Maryland's overburdened and underserved communities.

Networked geothermal systems are a super efficient, inflation resistant, reliable way to heat and cool buildings. These systems can be constructed today. They are an already proven, carbon-free technology. They minimize additional electric demand on the grid.

How Networked Geothermal Works

Geothermal heating and cooling systems, also called ground source heat pumps (GHPs), moderate the temperature of buildings using heat energy from the ground instead of the air. The entire system is made of a network of horizontal and vertical pipes, a water-based solution that transfers heat energy within the pipes, and heat pumps that warm and cool individual houses and buildings. The ground keeps the water-based solution at a constant temperature as it circulates through the pipes. The heat pumps pull the heat energy from the solution to warm buildings. Similarly, these systems disperse heat energy via the solution to cool buildings. In a networked geothermal system, geothermal heating and cooling systems are connected and can benefit multiple buildings- using waste heat from one building to heat another building nearby.



The WARMTH Act provides an opportunity to pilot networked geothermal systems in Maryland. This legislation is a strategic investment in the future of Maryland and has several benefits:

Strategic Use of IRA Funds

The Inflation Reduction Act provides an opportunity for historic investment in Maryland's energy infrastructure. However, these IRA funds give us an opportunity to fully electrify many low- and moderate-income homes, but not all. We need to invest these funds as efficiently as possible and we must invest them so that we can gather data and learn for future electrification from fund sources we have not yet identified.

Directing a portion of IRA funds to be used as part of a network geothermal system will allow for full electrification and weatherization of an entire neighborhood, with funds coordinated by MEA and construction coordinated by MES. This can create a model for future electrification.

Electrify Everything as Efficiently as Possible

Decarbonizing to meet Maryland's greenhouse gas reduction goals requires greater electrification of buildings and transportation. As Maryland electrifies, we need to maximize efficiency to limit upgrades needed to the electric grid. Specifically, we need to flatten the projected winter peak energy usage. A Maryland Energy Administration (MEA) study found that 1kW of electricity grid demand reduction can be achieved for each ton of ground source heat pump technology installed compared to electrification with air source heat pumps.

Ground Source Heat Pumps Efficiency Avoids Costs to Upgrade the Grid

A US Department of Energy study finds the “mass deployment of GHPs can electrify the building sector without overburdening the US electric power system. In all GHP deployment scenarios considered, significant reductions are realized in the needed power generation and capacity, energy storage capacity, transmission build-outs, seasonal capacity that can contribute toward resource adequacy, CO2 emissions, and marginal and cumulative system costs of electricity across the United States. Although this study was for the contiguous United States only, the findings are applicable to all 50 states and US territories.”¹

Utility Implementation

This legislation offers a new business model for gas utilities that relies on 100% clean energy and utilizes existing pipeline workforce skills. In Massachusetts, both Eversource and National Grid have pilot projects through which they will own the networked geothermal system and it will be rate-based in the same way their gas and electric assets are currently rate-based.² These projects have broken ground and will come on line in the next year. In states such as New York, legislation has been passed in order to remove barriers preventing utility providers from operating networked geothermal systems.³

Proven, community-scale change

Networked geothermal systems are the best opportunity for neighborhood scale shifts to fully electric heating and cooling. By operating on the neighborhood level, the state has the opportunity to implement projects that will move the needle toward our 2031 and 2045 goals. These systems are already operating in areas across the country and providing savings for institutions⁴ and residents⁵.

This bill...

- ✓ requires each gas company in the state to work with community organizations, municipal, and county governments to identify and propose one or two pilot projects to the Public Services Commission (PSC). Based on the cost benefit analysis, the PSC can approve pilots. The utilities will build and manage the boreholes and pipes in their current right of way, which will connect to ground source heat pumps in people’s homes which will be owned by the property owner. Utilities will recover the cost of the networked system, and IRA funds will cover the costs of the electric appliances which pilot properties will receive.
- ✓ Requires significant data collection once pilot projects are operational. This data will be key to developing the models for the mix of technology that will be needed for full electrification of buildings in Maryland.
- ✓ The pilots will be in neighborhoods with 80% low- and moderate-income residents and will prioritize overburdened and underserved communities.
- ✓ Labor standards in the bill prioritize maintaining work for those who work on gas infrastructure and ensure prevailing wages for construction on the projects. Because GHP work is similar to gas distribution work, minimal additional training ensures job security. Workers on our gas system have kept us safe and warm for decades. We need to ensure their job security in a new clean thermal energy system.

For more information please contact:

Delegate Lorig Charkoudian, lorig.charkoudian@house.state.md.us

410-841-3423

¹page xxiv, <https://www.osti.gov/biblio/2224191>

² <https://www.eversource.com/content/residential/about/transmission-distribution/projects/massachusetts-projects/geothermal-pilot-project>

³ <https://www.nysenate.gov/legislation/bills/2021/S9422>

⁴ <https://www.coloradomesa.edu/facilities/sustainability/geo-systems.html>

⁵ <https://www.cnbc.com/2022/09/01/geothermal-powered-housing-development-saves-homeowners-big-bucks.html>

Testimony.HB397_Delegate Lorig Charkoudian.docx.pdf

Uploaded by: Lorig Charkoudian

Position: FAV



THE MARYLAND HOUSE OF DELEGATES
ANNAPOLIS, MARYLAND 21401

HB 397- PUBLIC UTILITIES- THERMAL ENERGY NETWORK SYSTEMS- AUTHORIZATION AND ESTABLISHMENT (WORKING FOR ACCESSIBLE RENEWABLE MARYLAND THERMAL HEAT (WARMTH) ACT)

TESTIMONY OF DELEGATE LORIG CHARKOUDIAN

FEBRUARY 22, 2024

Chair Wilson, Vice Chair Crosby, and Members of the Economic Matters Committee,

The Inflation Reduction Act (IRA) offers time-bound funds that will provide an opportunity for historic investment in Maryland's energy infrastructure. These funds give us the opportunity to fully electrify many low-and-moderate income homes, but not all. In order to best utilize these funds, we must invest them so that we can not only make a big impact on our state's infrastructure but also learn lessons for future electrification from fund sources we have not yet identified.

This legislation engages a portion of Maryland's IRA funds to create community scale networked geothermal heating and cooling systems (GHP). In particular, it requires that each gas company in the state works with community organizations and municipal and county governments to identify pilot communities and propose these projects to the Public Service Commission (PSC). Based on the cost benefit analysis, the PSC will approve the pilots. The gas companies will be responsible for building the systems and collecting significant data once the projects are operational.

This legislation is timely and has many benefits.

1. Decarbonizing to meet Maryland's greenhouse gas reduction goals requires greater electrification of buildings and transportation. As Maryland electrifies, we need to maximize efficiency to limit upgrades needed to the electric grid. Specifically, we need to flatten the projected winter peak energy usage. Coupled with building envelope improvements, networked geothermal systems have been proven to reduce electricity demand.¹
2. A US Department of Energy study finds the "mass deployment of GHPs can electrify the building sector without overburdening the US electric power system. In all GHP deployment scenarios considered, significant reductions are realized in the needed power generation and capacity, energy storage capacity, transmission build-outs, seasonal capacity that can contribute toward resource adequacy, CO2 emissions, and marginal and cumulative system costs of electricity across the United States."²
3. This legislation offers a new business model for gas utilities that relies on 100% clean energy and utilizes existing pipeline workforce skills. In Massachusetts, both Eversource and National Grid have pilot projects through which they will own the networked geothermal system and it will be rate-based in the same way their gas and electric assets are currently rate-based.³ These projects have broken ground and will come on line in

¹ <https://www.energy.gov/eere/articles/us-department-energy-analysis-highlights-geothermal-heat-pumps-pathway-decarbonized>

² page xxiv, <https://www.osti.gov/biblio/2224191>

³ <https://www.eversource.com/content/residential/about/transmission-distribution/projects/massachusetts-projects/geothermal-pilot-project>

the next year. In states such as New York, legislation has been passed in order to remove barriers preventing utility providers from operating networked geothermal systems.⁴

4. Networked geothermal systems are the best opportunity for neighborhood scale shifts to fully electric heating and cooling. By operating on the neighborhood level, the state has the opportunity to implement projects that will move the needle toward our 2031 and 2045 goals. These systems are already operating in areas across the country and providing savings for institutions⁵ and residents⁶.

Lastly, the legislation includes a requirement that these pilot projects will be in neighborhoods with 80% low-and-moderate income residents and prioritize overburdened and underserved communities. And, the labor standards in the bill prioritize maintaining work for those who currently work on gas infrastructure and ensure prevailing wages for construction on the projects. Because GHP work is similar to gas distribution work, minimal additional training ensures job security. Workers on our gas system have kept us safe and warm for decades. We need to ensure their job security in a new clean thermal energy system.

I respectfully request a favorable report on HB 397.

⁴ <https://www.nysenate.gov/legislation/bills/2021/S9422>

⁵ <https://www.coloradomesa.edu/facilities/sustainability/geo-systems.html>

⁶ <https://www.cnbc.com/2022/09/01/geothermal-powered-housing-development-saves-homeowners-big-bucks.html>

HB397_MDSierraClub_fav 22February2024.pdf

Uploaded by: Mariah Shriner

Position: FAV



P.O. Box 278
Riverdale, MD 20738

Committee: Economic Matters
Testimony on: HB 0397, “Public Utilities – Thermal Energy Network Systems – Authorization and Establishment (Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act)”
Position: Support
Hearing Date: February 22, 2024

The Maryland Chapter of the Sierra Club urges a favorable report for HB 0397. The pilot projects proposed under the WARMTH Act will test an innovative approach to meeting Maryland’s climate goals for buildings.

This bill calls for each investor-owned gas utility (including Baltimore Gas and Electric, Washington Gas, Columbia Gas, and five smaller gas utilities) to propose one or two thermal energy network system (TENS) pilot projects to demonstrate this approach to delivering high efficiency, carbon-free heat and hot water for overburdened and underserved neighborhoods. Thermal energy network systems take advantage of the constant temperature in the ground six feet below the surface. They use boreholes drilled in the ground and transfer heat in the winter and cooling in the summer through pipes laid in the streets. Low-income residents who choose to participate in a TENS pilot would receive replacement appliances and heat pumps as well as weatherization at no cost to the resident. Labor standards in the proposal will assure that employees of the contractors or utilities building the pilots receive appropriate pay and benefits. The infrastructure outside the home would be rate-based and has the potential to provide gas utilities with a new business model by substituting return on assets from a thermal energy network system for the return on assets earned from new gas infrastructure. The two-year test would be evaluated for its cost effectiveness and its climate impact by the Public Service Commission (PSC).

No customer in an area for a proposed TENS will be forced to participate and customers will be able to opt out during the pilots.

The WARMTH Act calls for 80% of the customers in the pilots to come from low- or moderate-income housing. These households have been poorly served by Maryland’s energy efficiency programs. Low-income households account for 20-25% of the total households in Maryland. A disproportionate percentage of these households are Black, Hispanic, and Asian. Energy burdens for low-income Marylanders are six times those of the average Marylander; low-income Maryland residents spend, on average, 12% of their income on energy bills compared to 2% for Marylanders as a whole. These burdens are higher, in part, because many low-income families live in housing that has poor insulation, broken and inefficient fossil-fuel burning HVAC systems, drafty windows, and unreliable electrical systems. Much of the heating and cooking equipment in these homes also poses a health risk. Replacement of appliances with fully electric versions and weatherization for low-income residents would be fully covered under the WARMTH Act by the Inflation Reduction Act and other federal benefits, the EmPOWER program, Department of Housing and Community Development funds and Strategic Energy

Founded in 1892, the Sierra Club is America’s oldest and largest grassroots environmental organization. The Maryland Chapter has over 70,000 members and supporters, and the Sierra Club nationwide has over 800,000 members and nearly four million supporters.

Investment Funds. By focusing the pilots on overburdened and underserved communities and providing the appropriate level of weatherization and appliance replacement, the pilots have the potential to lower costs for these residents and demonstrate that we can effectively serve these communities. Coordination with local groups will help ensure communities understand and accept the TENS pilots when they are deployed in their neighborhoods.

TENS also has the potential to eliminate the health risk from burning methane gas in buildings. Gas leaks can increase levels of nitrous oxides, benzene, and particulates inside buildings, all of which generate health risk. Inside our homes, it also increases the likelihood that children will develop asthma. One study showed that children in homes with gas stoves have a 42% higher risk of asthma.¹ Benzene is also a known carcinogen.

Maryland's Climate Pollution Reduction Plan, recently published, noted that "the lifecycle emissions benefits of networked geothermal, which could be significant when avoided electricity generation emissions are included, would deliver lower lifecycle emissions."² Fuel burned in buildings accounts for approximately 13% of greenhouse gas emissions in Maryland. As Maryland works to achieve its climate goals to reduce greenhouse gas emissions by 60% (from 2006) by 2031 and achieve net zero emissions by 2045, many households will electrify their homes with heat pumps, heat pump hot water heaters, and other efficient electric appliances. Thermal energy network systems can be as much as six times as efficient as gas or electric resistance heating and twice as efficient as air source heat pumps. They could dramatically reduce greenhouse gas emissions if the pilots are successful and TENS projects are widely deployed.

While the recent report of the PSC's Electrification Study showed modest peak demand growth from electrification through 2031,³ utilities have been concerned that the increased load from electrification of heat and hot water could cause large increases in winter peak load for Maryland's electricity distribution systems. Because the temperature of the ground below six feet is a constant 55 degrees Fahrenheit and thermal energy network systems transfer heat that exists in the ground, they do not generate the potential summer or winter peak electric demand of other forms of electric heat. As a result, the impact on summer or winter load is small or even potentially positive, reducing load.⁴

The proposed legislation contains strong labor protections. It will encourage the utilities to offer the construction work on the project to their own employees and any contractor will be required to pay prevailing wages, provide benefits and retirement plans, offer employment to Maryland residents, and develop a plan for minority participation.

¹ Meta-analysis of the effects of indoor nitrogen dioxide and gas cooking on asthma and wheeze in children, International Journal of Epidemiology, December 2013, Pages 1724-1737, Weiwei Lin, Bert Brunekreer, Ulrike Gehring, <https://academic.oup.com/ije/article/42/6/1724/737113?login=false>

² The Climate Pollution Reduction Plan cite is: Maryland's Climate Pollution Reduction Plan, Maryland Department of the Environment, December 2023, page 41, <https://mde.maryland.gov/programs/air/ClimateChange/Maryland%20Climate%20Reduction%20Plan/Maryland%207s%20Climate%20Pollution%20Reduction%20Plan%20-%20Final%20-%20Dec%2028%202023.pdf>

³ Maryland PSC Electrification Study, December 2023, page 3. <https://www.psc.state.md.us/wp-content/uploads/Corrected-MDPSC-Electrification-Study-Report-2.pdf>

⁴ By 2027 all Maryland utilities are expected to be winter peaking according to the PSC's Electrification Study.

The PSC will play an important role in ensuring the pilot TENS projects are in the interest of ratepayers and will help Maryland achieve its climate goals. Proposals will be evaluated by the PSC for ratepayer impacts, cost effectiveness, the impact on greenhouse gas reduction, the impact on electrification, benefits for customers and employees, avoided gas pipe replacement costs, the impact on investments, and costs of distribution and transmission, etc. The construction and operation of the pilots will be monitored by the PSC, and data will be collected by gas utilities and independent researchers. The PSC will evaluate the results of the pilots in 2029.

Gas utilities currently achieve returns for shareholders by earning a regulated return on assets, largely from gas pipeline mains and services in the ground. Thermal energy network systems have the potential to offer gas utilities a new asset base that does not involve distributing (and, almost inevitably, leaking) natural gas. Instead of creating stranded assets by investing to replace gas pipes, the gas utilities could invest and earn a return on borehole and pipe assets to carry warmth and cooling to buildings.

The Maryland Chapter of the Sierra Club is supportive of these pilots which could lead to decarbonization of heat and appliances in Maryland buildings, in line with the goals of the Climate Solutions Now Act. The TENS approach to decarbonization would be more efficient than electric resistance heat or air source heat pumps and lower winter and summer peak demand for electricity, while providing an alternative business model for utilities. The customer and labor protections are appropriate. The PSC will evaluate the cost effectiveness and climate impact of the pilots.

The Maryland Chapter of the Sierra urges approval of this legislation.

Christopher T. Stix
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Josh Tulkin
Chapter Director
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HB 397 Public Utilities – Thermal Energy Network S

Uploaded by: Mariana Rosales

Position: FAV

Thursday, February 22, 2024

TO: Delegate C. T. Wilson, Chair of the House Economic Matters Committee, and Committee Members

FROM: Mariana Rosales, The Nature Conservancy, Director of Climate; Cait Kerr, The Nature Conservancy, State Policy Manager

POSITION: Support HB 397 Public Utilities – Thermal Energy Network Systems – Authorization and Establishment (Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act)

The Nature Conservancy (TNC) supports HB 397 offered by Delegate Charkoudian. This bill is a strategic investment in Maryland's future, particularly in our commitment to promoting equitable access to renewable energy and addressing climate change.

The WARMTH Act provides a unique opportunity to pilot networked geothermal heating and cooling systems, also known as ground-source heat pumps (GHPs), in Maryland. These systems use the ground's temperature to heat or cool buildings, making them highly efficient and reliable. By promoting GHPs' use, the WARMTH Act will contribute to reducing greenhouse gas emissions and help Maryland achieve our climate action goals.

This legislation is designed to ensure that renewable energy benefits are accessible to all Maryland residents, especially those in underserved and low- to moderate-income communities. The bill requires gas companies to work with community organizations, municipalities, and county governments to identify and propose pilot projects to the Public Services Commission (PSC). These pilot projects will prioritize neighborhoods with 80% low- and moderate-income residents, contributing to equitable and just electrification. Networked geothermal creates opportunities for whole communities to benefit from electrification through a single geothermal system, which would connect to heat pumps in individual homes.

The WARMTH Act aligns with Maryland's statutory requirements to reduce greenhouse gas emissions and transition to a net-zero status. Maryland has a statutory requirement under the Climate Solutions Now Act of 2022 to reduce gas emissions to 60% of 2006 by 2031 and the state is further required to transition to a net-zero status by 2045. By promoting GHPs' use, this bill supports Maryland's aggressive climate action plan and helps the state move towards a more sustainable and resilient future.

TNC commends Delegate Charkoudian for introducing HB 397, which is a critical step towards achieving Maryland's climate and energy goals, while also providing economic opportunities and job security for workers in the clean energy sector.

Therefore, we urge a favorable report on HB 397.

HB0397 - Public Utilities – Thermal Energy Network

Uploaded by: Maryland Legislative Latino Caucus

Position: FAV



MARYLAND LEGISLATIVE LATINO CAUCUS

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JASON A. AVILA GARCIA, EXECUTIVE DIRECTOR

TO: Delegate C.T. Wilson, Chair
Delegate Brian M. Crosby, Vice Chair
Economic Matters, Committee Members
FROM: Maryland Legislative Latino Caucus
DATE: 2/1/24
RE: HB0397 - Public Utilities – Thermal Energy Network
Systems – Authorization and Establishment (Working for
Accessible Renewable Maryland Thermal Heat Act)

The MLLC supports HB0397 - Public Utilities – Thermal Energy Network Systems – Authorization and Establishment (Working for Accessible Renewable Maryland Thermal Heat Act), 2024

The MLLC is a bipartisan group of Senators and Delegates committed to supporting legislation that improves the lives of Latinos throughout our state. The MLLC is a crucial voice in the development of public policy that uplifts the Latino community and benefits the state of Maryland. Thank you for allowing us the opportunity to express our support of HB0397.

This bill will bring networked geothermal clean energy systems to underserved communities as 80% of a pilot program’s customers must meet low or moderate-income housing criteria and prioritize overburdened and underserved communities. In addition, the Community Benefits Agreement associated with this bill promotes increased opportunities for local businesses and small, minority, women-owned, and veteran-owned businesses in the clean energy industry. It utilizes highly skilled craft workers who shall not be paid less than the prevailing wage rate and promotes career training opportunities in manufacturing, maintenance, and construction for local residents, veterans, women, minorities and formerly incarcerated individuals as well as provisions for hiring local community members and historically disadvantaged groups. It seeks to ensure that workers can both organize and collectively bargain and requires using locally, sustainably and domestically manufactured construction materials and components to the extent possible.

HB0397 will require gas companies to develop a plan for a pilot thermal energy network system or systems designed to replace gas infrastructure and notify the Public Service Commission that the plan’s development has begun on or before October 1, 2024. Designed to bring networked thermal energy pilot programs primarily to low-income neighborhoods, this bill will use IRA funds to cover the costs of the electric appliances which pilot properties. By requiring each gas company is to develop a plan for a pilot thermal energy network system(s) in coordination with community groups, local governments, the Commission, in consultation with the Maryland Energy Administration and the Office of the People’s Counsel and submit one or two pilot plan proposals to the Public Service Commission for approval and authorization on or before July 1, 2025, HB0397 will assist Maryland in meeting its statutory requirement to reduce greenhouse gas emissions to 60% of 2006 levels by 2031.

For these reasons, the Maryland Legislative Latino Caucus respectfully requests a favorable report on HB0397.

HB397_IndivisibleHoCoMD_FAV_Alexander.pdf

Uploaded by: Peter Alexander

Position: FAV



HB397

**Public Utilities – Thermal Energy Network Systems – Authorization and Establishment
(Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act)
Testimony before House Economic Matters Committee
February 22, 2024
Position: Favorable**

Chair Wilson, Vice Chair Crosby, and members of the committee, my name is Peter Alexander and I represent the 750+ members of Indivisible Howard County. Indivisible Howard County is an active member of the Maryland Legislative Coalition (with 30,000+ members). We are providing written testimony today in **support of HB397**. We appreciate the leadership of Delegate Charkoudian for sponsoring this important legislation.

Maryland has a statutory requirement to reduce greenhouse gas emissions to 60% of 2006 levels by 2031 and transition to transition to a net-zero economy by 2045. The transition to a carbon-free economy provides benefits to public health and opportunities to invest in Maryland's overburdened and underserved communities.

As another step toward these objectives, the WARMTH Act provides an opportunity to pilot networked geothermal systems in Maryland. This legislation is a strategic investment in the future of Maryland and has several benefits including (1) strategic application of Inflation Reduction Act funding, (2) reducing electricity grid burden, thus avoiding unnecessary grid expansion, (3) offering a new business model for gas utilities that relies on 100% clean energy and utilizes existing pipeline workforce skills, and (4) provides the state an opportunity to implement projects that will advance our 2031 and 2045 climate goals by enabling neighborhood-scale shifts to fully electric heating and cooling.

HB397 requires gas companies to work with community organizations, municipal, and county governments to identify and propose pilot projects to the Public Services Commission (PSC) which the PSC can approve based on a cost benefit analysis. The utilities will build and manage the construction in connecting to ground source heat pumps (GHP) in people's homes. Because GHP work is similar to gas distribution work, minimal additional training ensures job security. Utilities will recover the cost of the networked system, and IRA funds will cover the costs of the electric appliances which pilot properties will receive. The pilots will be in neighborhoods with 80% low- and moderate-income residents and will prioritize overburdened and underserved communities. Labor standards in the bill prioritize maintaining work for those who work on gas infrastructure and ensure prevailing wages for construction on the projects.

We respectfully urge a favorable committee report.

Peter Alexander, PhD
Woodbine, MD

HB397 - MDLCV Support - WARMTH Act - Feb 22, 2024.

Uploaded by: Rebecca Rehr

Position: FAV



Kim Coble
Executive Director

February 22, 2024

2024 Board of
Directors

Support HB 397 - Public Utilities - Thermal Energy Network Systems - Authorization and Establishment (Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act)

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The Hon. Nancy Kopp,
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Kimberly Armstrong
Mike Davis
Candace Dodson-Reed
Verna Harrison
Melanie Hartwig-Davis
Charles Hernick
The Hon. Steve Lafferty
Patrick Miller
Bonnie L. Norman
Katherine (Kitty)
Thomas

Dear Chair Wilson and Members of the Committee:

Maryland LCV supports HB 397 - Public Utilities - Thermal Energy Network Systems - Authorization and Establishment (Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act), and we thank Delegate Charkoudian for her leadership on this issue.

Both the December 2023 Maryland Department of the Environment (MDE) Climate Pollution Reduction Plan and the November 2021 Building Energy Transition Plan shared a framework for decarbonizing Maryland's buildings and other emitting sectors in order to reach our state's climate targets - the most ambitious in the country. HB 397 is critical to meeting the goals laid out in these Plans.

According to the Climate Pollution Reduction Plan, nearly all of the state's electricity consumption was used in the building sector. In 2017, buildings accounted for almost 20% of the state's greenhouse gas emissions. 13% of state emissions were for direct use in buildings, which is primarily space and water heating. Geothermal heat pumps provide clean, renewable and efficient electric heating and cooling to buildings. As of August 2022 there were already 3,268 residential and commercial geothermal heat pump systems in Maryland.

Networked geothermal systems are larger and connect more buildings to the benefits of geothermal heat pumps. Building efficiency gains resulting from networked geothermal can aid in reducing the buildings' share of Maryland's electricity consumption and, subsequently, building sector emissions.

Several states, neighborhoods, and companies are beginning to adopt networked geothermal for their efficiency and sustainability benefits. They include a 6 million gross square feet of an auto manufacturer's R&D facilities, a 2.2 million square feet campus of a Fortune 100 chemicals company, other large campus industrial facilities, a 400 home neighborhood in Whisper Valley, Texas, and the New York State Public Service Commission and Con Edison's large-scale geothermal energy network pilot program. Several of Maryland's utilities are already incorporating district and networked geothermal solutions in their future generation planning.

In addition to being clean and efficient, geothermal heat pumps have been offered as an indoor air quality solution, as they filter dust, allergens, mold, and other airborne contaminants. Finally, geothermal heating and cooling is more cost effective than the use of fossil fuel appliances (i.e. propane/gas furnaces, etc.). Marylanders are spending an average of \$191 each month on electricity – 12% higher than the national average. For these reasons, geothermal heating and cooling should be pursued at a large scale as a means to improve energy, economic, and health equity in Maryland. Poor indoor and outdoor air quality are disproportionately affecting Maryland’s overburdened and underserved populations. High energy burdens are disproportionately found among propane users, in Baltimore City’s low-income and majority-Black areas, and in rural areas primarily on the Eastern Shore but also in Southern and Western Maryland. HB 397 also ensures energy and economic equity by prioritizing the leadership of local, small, and minority-owned and -serving businesses working in the building industry.

Maryland asserted itself as a leader in climate solutions when we set the most ambitious state climate targets in the country. A pilot networked geothermal program, similar to New York’s, will be a worthwhile strategy as Maryland looks toward meeting these goals amongst a future climate increasing heating and cooling demand.

HB 397 continues the process of meeting Maryland’s climate targets, which includes building decarbonization goals. **Maryland LCV urges a favorable report on this important bill.**

Testimony in support of HB0397.pdf

Uploaded by: Richard KAP Kaplowitz

Position: FAV

HB0397_RichardKaplowitz_FAV

2/22//2024

Richard Keith Kaplowitz
Frederick, MD 21703

TESTIMONY ON HB#/0397 – FAVORABLE

**Public Utilities – Thermal Energy Network Systems – Authorization and Establishment
(Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act)**

TO: Chair Wilson, Vice Chair Crosby and members of the Economic Matters Committee

FROM: Richard Keith Kaplowitz

My name is Richard K. Kaplowitz. I am a resident of District 3. I am submitting this testimony in support of HB#0397, Public Utilities – Thermal Energy Network Systems – Authorization and Establishment (Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act)

Maryland faces two critical needs. The primary need is to act responsibly to create policies and procedures that ensure climate protection; a plan to deal with climate change. This critical need is to manage sources of energy that involve fossil fuel sources to mitigate the negative effects of the use of fossil fuel. The second critical need to have available multiple sources to provide heating for persons in Maryland, warmth when it is cold.

This bill attempts to ensure gas companies will behave in a responsible manner in creation of a pilot thermal energy network system that will satisfy the two goals of providing warmth while mitigating negative impacts of natural gas usage to accomplish that. We need to know if natural gas can be used without attendant harm to the environment.

This bill will make gas companies responsible for better planning on how that resource can be used without damaging the climate. It will serve to make collection of data to make future decisions more informed.

I respectfully urge this committee to return a favorable report and pass HB0397.

HB397 Support.pdf

Uploaded by: Rico Albacarys

Position: FAV

INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS - LOCAL UNION No. 24



AFFILIATED WITH:
Baltimore-D.C. Metro Building Trades Council - AFL-CIO
Baltimore Port Council
Baltimore Metro Council - AFL-CIO
Central MD Labor Council - AFL-CIO
Del-Mar-Va Labor Council - AFL-CIO
Maryland State - D.C. - AFL-CIO
National Safety Council

C. SAMUEL CURRERI, President
DAVID W. SPRINGHAM, JR., Recording Secretary
JEROME T. MILLER, Financial Secretary
MICHAEL J. MCHALE, Business Manager

OFFICE:
2701 W. PATAPSCO AVENUE
SUITE 200

AFL-CIO-CLC

BALTIMORE, MARYLAND 21230

Phone: 410-247-5511
FAX: 410-536-4338

Written Testimony of
Michael McHale, Business Agent, IBEW LOCAL 24
Before the House Economic Matters Committee On
HB 397 Public Utilities – Thermal Energy Network Systems – Authorization and
Establishment

Support

February 20, 2024

Chairman Wilson and Committee Members,

My name is Michael McHale, Business Manager and 39-year member of IBEW Local 24. I am writing to express my strong **support** of **HB 397**. By promoting the adoption of geothermal heating and cooling systems, this legislation aligns with our state's aggressive climate action plans to reduce emissions. It provides a tangible pathway towards achieving our targets and transitioning to a net-zero status by 2045.

The WARMTH Act protects the livelihoods of existing workers, while creating opportunities for a new workforce. By requiring gas companies to collaborate with community organizations and local governments, this legislation creates family-sustaining jobs in the transition to clean thermal energy systems. The bill's emphasis on maintaining work for those employed in gas infrastructure and ensuring prevailing wages for construction projects demonstrates a commitment to protecting workers' rights and fostering job security in a rapidly evolving energy landscape.

HB 397 represents a forward-thinking approach to energy policy that balances environmental stewardship, social equity, and economic prosperity. By piloting networked geothermal systems this legislation offers a blueprint for a more sustainable and inclusive future for Maryland. I respectfully request that you vote **favorably** on **House Bill 397**.

Sincerely,

Michael McHale
Business Manager
IBEW Local 24

HB0397_WARMTH_ACT_ECM_HoCoCA.org_FAV.pdf

Uploaded by: Ruth White

Position: FAV



HoCoClimateAction.org
Howard County, Maryland

HB0397 - Public Utilities – Thermal Energy Network Systems – Authorization and Establishment (Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act)

Hearing Date: February 22, 2024

Bill Sponsor: Delegate Charkoudian

Committee: Economics Matters Committee

Submitting: Ruth White for HoCo Climate Action

Position: Favorable

[HoCo Climate Action](#) is a [350.org](#) local chapter and a grassroots organization representing approximately 1,400 subscribers. It is also a member of the [Climate Justice Wing](#) of the [Maryland Legislative Coalition](#). We urge you **to support HB0397, Warmth Act**, which provides an opportunity to pilot networked geothermal systems in Maryland.

Pilots established by The Warmth Act will aid in programs to decarbonize buildings, a path begun by commitments under the Climate Solutions Now Act of 2022. In addition, Governor Moore has ongoing commitments to decarbonization through: (1) the Maryland Climate Plan: [Maryland's Climate Pollution Reduction Plan: Policies to Reduce Statewide Greenhouse Gas Emissions 60% by 2031 and Create a Path to Net-Zero by 2045](#); (2) recent pledge in the [Northeast States for Coordinated Air Use Management](#) to (along with 8 other states) set goal for heat pumps to meet at least 65% of residential-scale heating, air conditioning and water heating shipments by 2030 and 90% by 2040; and (3) [announcement February 9th to spend \\$90 million](#) on reducing carbon pollution in Maryland with \$50 million toward decarbonizing community buildings including multifamily housing.

Under the WARMTH ACT, utilities will submit plans for pilots for thermal energy networks systems (often called networked geothermal) to the Public Service Commission. These pilots will be in distinct neighborhoods to show the feasibility of replacing gas with large thermal (geothermal) systems providing heat and air conditioning on a neighborhood basis. This technology is already used by Maryland university systems and more. The pilots will demonstrate how decarbonization can work by replacing all necessary appliance upgrades, home retrofits and panel upgrades. The pilot provides for collaboration by cities, counties or community organizations at the neighborhood level, so all in the neighborhood are engaged and see the benefit of the projects.

These pilots will: (1) make strategic use of IRA funds; (2) demonstrate effective means of electrifying everything in homes one neighborhood at a time; (3) provide proven, community-scale change which is seen already in systems in use across the country, systems which are already providing savings for institutions and residents; (4) focus on neighborhoods with 80% low- and moderate-income residents and will prioritize overburdened and underserved communities.

For all these reasons, and many more others will submit in their testimony, we support this bill, envisioning these pilots as providing a key vision for strategic and effective, rapid expansion of heat pump technology and decarbonization of our buildings.

We urge your favorable vote for HB0397.

Howard County Climate Action

Submitted by Ruth White, Steering and Advocacy Committee

www.HoCoClimateAction.org

HoCoClimateAction@gmail.com

WARMTH TestimonyHB0397.pdf

Uploaded by: Sonia Demiray

Position: FAV



Testimony HB0397 – The WARMTH Act

Position: FAVORABLE

February 22, 2024

My name is Sonia Demiray, I am the co-founder of the Climate Communications Coalition and a resident of Frederick County. Our group wholeheartedly endorses the Thermal Energy Network Systems - Authorization and Establishment (Working for Accessible Renewable Maryland Thermal Heat).

The WARMTH Act fully aligns with the state’s climate action plans and the statutory requirement to reduce gas emissions to 60% over 2006 by 2031. It also helps us transition to a net-zero status by 2045.

While The Inflation Reduction Act provides an opportunity for historic investment in Maryland’s energy infrastructure, these funds do not provide enough investment to fully electrify all low- and moderate-income homes. Directing a portion of the IRA funds to be used as part of a network geothermal system will allow for full electrification and weatherization of an entire neighborhood, with funds coordinated by MEA and construction coordinated by MES. This can create a model for future electrification at scale.

The proposed pilot studies will be conducted in neighborhoods with 80% low- and moderate-income residents and will prioritize overburdened and underserved communities – this is in line with Justice 40 principles. In addition, the labor standards in the bill prioritize maintaining work for those who work on gas infrastructure and ensure prevailing wages for construction on the projects. Because Geothermal Heat Pumps (GHP) also known as GeoExchange operate in a similar way to gas distribution work, minimal additional training ensures job security. Workers on our gas system have kept us safe and warm for decades. We need to ensure their job security in a new clean thermal energy system.

There is no downside to the WARMTH Act. It simply provides a neighborhood scale approach to 100% clean energy. We urge a favorable vote on HB0397.

###

HB 397 Greg Akerman BDCBT (SUPPORT) copy.pdf

Uploaded by: Victoria Leonard

Position: FAV



Electrical Workers

Insulators

Boilermakers

United Association

Plumbers & Gas Fitters

Sprinkler Fitters

Steam Fitters

Roofers

Cement Masons

Teamsters

Laborers

Bricklayers

Ironworkers

Sheet Metal Workers

Elevator Constructors

Painters

Operating Engineers

Carpenters

February 22, 2024

The Honorable CT Wilson, Chair
The Honorable Brian Crosby, Vice Chair
House Economic Matters Committee
House Office Building Room 231
Annapolis, Maryland 21401

**HB 397: Public Utilities - Thermal Energy Network Systems - Authorization and Establishment (Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act
Position - Support**

Thank you Chair Wilson and Vice Chair Crosby and members of the House Economic Matters Committee for the opportunity to submit written testimony in support of HB 397.

The BDCBT represents 28 construction trade unions across Maryland, Northern Virginia, and the District of Columbia. Combined, our trade unions represent more than 30,000 skilled craft professionals in the construction industry.

BDCBT supports HB 397. HB 397 establishes a pilot for networked geothermal systems in Maryland. Networked geothermal systems is a proven technology that Maryland can use to reduce greenhouse gas emissions. Networked geothermal systems are an efficient, inflation resistant, reliable way to heat and cool buildings. They also minimize additional electric demand on the grid.

One of the key features of HB 397 that BDCBT supports are its labor standards. Specifically, HB 397 prioritizes the payment of prevailing wages on pilot projects and maintaining employment for those who work on gas infrastructure.

Maryland has a statutory requirement to reduce greenhouse gas emissions to 60% of 2006 levels by 2031. Once this milestone is achieved, the state must transition to a net-zero economy by 2045. Meeting these targets is urgent and imperative. The transition to a carbon-free economy provides benefits to public health and opportunities to invest in Maryland's overburdened and underserved communities. Networked geothermal systems should be part of the solution.

We urge the committee to issue a favorable report on HB 397.

Sincerely,
Greg Akerman

HB397-Pavlak-FWA.pdf

Uploaded by: Alex Pavlak

Position: FWA

February 22, 2024

HB0397 Thermal Energy Network Systems (WARMTH Act) **Alex Pavlak, FWA**

Amendment #1 – State a purpose, a program objective as:

- Gather data to quantify direct and indirect cost of Neighborhood Geothermal Heat Pump Networks. The direct cost is the turnkey installation. The indirect is any additional and incidental costs such stubborn neighbors or thermal insulation.
- Compare this concept with existing and proposed to zero carbon alternatives such as SMR nuclear district heating, micro reactors, biofuel combustion, air source heat pumps ...

In a rational world, it is premature to set the purpose as to decarbonize neighborhoods because we do not know enough about costs and alternatives. While the concept is theoretically feasible, it has not been demonstrated, not proven to be cost effective. The next step is to gather data. In engineering we call this stage full-scale development.

Amendment #2 – Set the scope of the program:

- Two modest systems: one for new construction, one for existing construction
- Contingent on most of the funding coming from federal sources.

Amendment #3 - Compete Maryland utilities for the two systems.



BGE_SWA_ECM_HB397- Working for Accessible Renewabl

Uploaded by: Charles Washington

Position: FWA

Support with Amendments
Economic Matters
2/22/2024

HB397- Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act

Baltimore Gas and Electric Company (BGE) is pleased to support with amendments *House Bill 397 - Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act*. *House Bill 397* requires each gas company to file with the Public Service Commission (Commission) a proposal for one or two thermal energy network systems pilot programs by July 1, 2025.

BGE is a key partner and has an important role to play in achieving the state's climate goals. Maryland's energy transformation should include investments in network geothermal, battery storage, and other emerging technology that proves viable, but will also rely on the electric and gas distribution systems. BGE supports an *integrated energy delivery system* utilizing multiple sources of energy to maximize customer choice and assist the state in attaining its decarbonization objectives at the lowest cost.

House Bill 397 would require gas companies to establish a network geothermal pilot program. Network geothermal works by creating a neighborhood of ground source heat pumps (GSHP), each connected to a common network of underground pipes that tap into the earth's constant underground temperatures. If properly coordinated, network geothermal could reduce the use of gas and other fossil fuels as a heating source, significantly reducing GHG emissions while also reducing incremental costs of new electric infrastructure expansion that would be needed to support all-electric heating, according to an independent analysis by Energy + Environmental Economics (E3)¹.

For much of 2023, BGE has been in conversations with gas companies executing networked geothermal pilot programs in other states, and the company is working with an experienced consultant to understand the potential of the technology in Maryland. The preliminary results of our discussions indicate that when compared with full electrification, network geothermal is cost effective. Networked geothermal compares particularly

¹ BGE engaged E3 to conduct a study analyzing viable pathways to achieve the state's goals and to identify potential impacts to customers in BGE's service area.

BGE, headquartered in Baltimore, is Maryland's largest gas and electric utility, delivering power to more than 1.3 million electric customers and more than 700,000 natural gas customers in central Maryland. The company's approximately 3,400 employees are committed to the safe and reliable delivery of gas and electricity, as well as enhanced energy management, conservation, environmental stewardship and community assistance. BGE is a subsidiary of Exelon Corporation (NYSE: EXC), the nation's largest energy delivery company.

favorably due to the tax credit that is available until 2032, as a result of the Federal Inflation Reduction Act of 2022 (IRA).

While BGE sees promise in network geothermal for achieving the state's energy goals, the company commits to working with the sponsor and the committee to address challenges with the timeline and program requirements prescribed in *House Bill 397*. *House Bill 397* requires gas companies to establish a pilot program by July 1, 2025. The timeline for the legislation is ambitious, resource-intensive, and concerning. Approval from the Commission could easily take longer than six months before a company could even begin implementation. Further, to meet the current timelines, a utility would have already needed to undertake a feasibility study, conduct engagement and outreach with stakeholders, identify a pilot location and site-specific study, and develop an RFP for the engineering and design to accommodate requirements associated with *House Bill 397*. We recommend a more measured timeline for implementing the network geothermal pilot program.

Second, the legislation requires that each pilot program includes 80% of customers from low to moderate-income housing (LMI). BGE recommends amending the legislation to require the LMI requirement for one of the two pilots to achieve a more representative cross section of our service territory. LMI customers are likely to have lower cooling demands than their heating demands due to financial limitations; this thermal imbalance could result in higher costs and significantly lower efficiencies, adversely skewing pilot results. BGE supports giving more flexibility in the program design to ensure that the pilots are economically viable and representative of the potential results that can be achieved in a scaled deployment.

Additionally, the pilot program can potentially be implemented cost-effectively if federal incentives can be fully leveraged; however, *House Bill 397* as drafted would preclude this from happening. IRA incentives and Internal Revenue Service (IRS) tax credits are available for purchasing behind-the-meter equipment and investments in the network infrastructure. The IRS mandates that the entity seeking tax credits must own BOTH the network infrastructure and the behind-the-meter GSHPs to qualify for the 40% IRA tax credit. If the utility purchases the ground source heat pumps, in addition to owning the geothermal network, the 40% IRA incentive could apply. As currently drafted, *House Bill 397* does not allow the utility to own the behind-the-meter heat pumps, so the federal incentive would be lost. BGE respectfully asks that the legislation be amended to enable gas

BGE, headquartered in Baltimore, is Maryland's largest gas and electric utility, delivering power to more than 1.3 million electric customers and more than 700,000 natural gas customers in central Maryland. The company's approximately 3,400 employees are committed to the safe and reliable delivery of gas and electricity, as well as enhanced energy management, conservation, environmental stewardship and community assistance. BGE is a subsidiary of Exelon Corporation (NYSE: EXC), the nation's largest energy delivery company.



Position Statement

utilities to own the necessary behind-the-meter assets to maximize federal incentives and lower the costs to our customers.

BGE is preparing to deploy a network geothermal pilot program and welcomes the opportunity to help the state achieve its energy and decarbonization goals. For these reasons, BGE supports *House Bill 397* with amendments and respectfully requests a favorable committee report.

BGE, headquartered in Baltimore, is Maryland's largest gas and electric utility, delivering power to more than 1.3 million electric customers and more than 700,000 natural gas customers in central Maryland. The company's approximately 3,400 employees are committed to the safe and reliable delivery of gas and electricity, as well as enhanced energy management, conservation, environmental stewardship and community assistance. BGE is a subsidiary of Exelon Corporation (NYSE: EXC), the nation's largest energy delivery company.

Charles Washington | Brittany Jones | Guy Andes | Dytonia Reed | 410.269.5281

HB397_DHCD_SUPPORT_WITH_AMENDMENTS.pdf

Uploaded by: Chuck Cook

Position: FWA

DATE: February 22, 2024

BILL NO.: House Bill 397

TITLE: Public Utilities – Thermal Energy Network Systems – Authorization and Establishment (Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act)

COMMITTEE: House Economic Matters Committee

Letter of Support with Amendments

Description of Bill:

House Bill 397 would require each gas company operating in Maryland to propose to the Public Service Commission a pilot geothermal energy network system that would provide certain residences with an efficient, low-cost heating and cooling system and appliances. The program would be focused on low- to moderate-income neighborhoods. The bill also authorizes local jurisdictions and community organizations to submit neighborhoods to gas companies for consideration and establishes requirements and authorizations for the development and implementation of proposed thermal energy network systems. IT also requires the Maryland Energy Administration to coordinate with DHCD to provide services or funding for weatherization of low-to moderate income housing within the pilot system’s area.

Background and Analysis:

Geothermal energy is a renewable energy source that has the potential to help Marylanders in two ways: First, by providing consumers with a low-cost, renewable, and clean source of home energy as well as more energy-efficient appliances, and second, by reducing reliance on fossil fuels and, therefore, helping the state meet its greenhouse emissions goals. Creating this pilot program will allow DHCD to provide services to a population that may otherwise not be aware of the energy efficiency and weatherization resources available to them.

DHCD agrees with the amendments proposed by the Maryland Energy Administration:

1. On p. 11, lines 10-19, cap total behind-the-meter costs at \$3 million. Federal rebates under the Inflation Reduction Act can provide a maximum of \$12,400 for low- to moderate income (LMI) households. IRA rebates will likely cover less than half of the total behind-the-meter costs for heat pumps, water heaters, panel and electric upgrades, installation, appliance replacement, project management, and other construction costs. Also, there is a category of federal money– the Investment Tax Credit - that would not apply to this pilot project. Under recent guidance from the I.R.S., the Investment Tax Credit - which would cover about 30% of total project costs (and up to 70% under certain conditions) – may not be available for a project that is owned jointly by a utility and a property owner, as proposed here. Costs incurred by the Maryland Environmental Service (MES) to administer the contracts do not appear to be addressed in the bill, raising the question of whether MEA will be expected to shoulder those costs as well. MEA needs to budget with certainty.

2. Delete mention of \$12 million on p. 11, line 22, such that it reads: “THE ADMINISTRATION SHALL RESERVE ~~\$12,000,000 OF~~ FEDERAL FUNDING FROM THE U.S. DEPARTMENT OF ENERGY [.] As written here, a pilot with \$12M of federal funding could include at least 950 homes (assuming a maximum of \$12,400 per rebate per homes). MEA would be responsible for the remaining behind-the-meter program costs, which could exceed \$20 million.

3. Older appliances. Consider adding to the PSC criteria a requirement that the utilities choose a pilot where many of the homes have appliances that are at or near the end of their useful lives.

4. Discontinuation. Consider on P. 9 inserting in subsection D a provision to protect customers in the event a pilot is discontinued such as (3) IN THE EVENT A PILOT SYSTEM IS DECOMMISSIONED OR DISCONTINUED BEFORE THE END OF THE USEFUL LIFE OF THE APPLIANCES INSTALLED UNDER THIS SUBTITLE, THE COMMISSION SHALL MAKE SURE THAT CUSTOMERS PARTICIPATING IN A PILOT SYSTEM DO NOT INCUR ADDITIONAL EXPENSES RELATED TO DECOMMISSIONING OR INSTALLING NEW APPLIANCES.

5. Community-based organization funding. Please add “or any other state or federal funding source” to the provision on p. 10, line 26.

DHCD Position:

The Maryland Department of Housing and Community Development respectfully requests a **favorable report as amended** on House Bill 397, with the addition of the amendments, above, proposed by the Maryland Energy Administration.



HB 397 MDE SWA.docx.pdf

Uploaded by: Hadley Anthony

Position: FWA



The Maryland Department of the Environment
Secretary Serena McIlwain

House Bill 397

*Thermal Energy Network Systems – Authorization and Establishment (Working
for Accessible Renewable Maryland Thermal Heat (WARMTH) Act)*

Position: Support with Amendments

Committee: Environment and Transportation Committee

Date: February 22, 2024

From: Hadley Anthony

The Maryland Department of the Environment (MDE) **SUPPORTS HB 397 WITH AMENDMENTS.**

Bill Summary

House Bill 397 would require gas companies to develop a plan to pilot a thermal energy network system or systems by October 1, 2024, and submit a proposal or proposals to the Public Service Commission (PSC) by July 1, 2025. Proposals must consider local community input, ensure that at least 80% of served customers are low to moderate income residential customers, and include a cost-benefit analysis of associated avoided cost savings related to electric distribution and transmission as well as gas pipe replacements. The PSC would approve, modify, or reject a plan. The PSC and the Department of Labor would also be authorized to consider, review, and enforce a community benefit agreement.

Position Rationale

This bill aligns with Maryland’s climate goals to reach 60% greenhouse gas emissions (GHG) reductions, compared to 2006 levels, by 2031 and to reach net-zero emissions by 2045. Maryland must continue investing in clean energy technologies that meet the policy demands of the day, including considerations for supporting equitable outcomes, supporting a clean energy workforce, and supporting achievable and cost-effective regulatory designs. Networked geothermal systems have enormous GHG reduction potential due to high efficiency, existing technological availability, and electric demand reductions that can align with grid reliability. The bill also supports MDE’s environmental justice goals by including prioritization of investments in underserved or overburdened communities.

The Maryland Energy Administration will be offering several amendments, which MDE also supports. These amendments include capping the total behind-the-meter costs at \$3 million, removing mention of \$12 million in federal funding to reserve, requiring the PSC to choose a pilot where many of the homes have appliances at or near the end of their useful lives, inserting a provision to protect customers in the event a pilot program is discontinued, and adding the language “or any other state or federal funding source” to the provision around community-based organization funding.

For the reasons detailed above, MDE urges a **FAVORABLE WITH AMENDMENTS** report for HB 397.

Contact: Les Knapp, Government Relations Director
Cell: 410-453-2611 (cell), Email: les.knapp@maryland.gov

HB0397 WARMTH Act - FWA.pdf

Uploaded by: Joyce Lombardi

Position: FWA



TO: Chair Wilson, Vice Chair Crosby, and Members of the Economic Matters Committee
FROM: MEA
SUBJECT: HB 397 - Public Utilities - Thermal Energy Network Systems - Authorization and Establishment (Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act)
DATE: February 22, 2024

MEA Position: FAVORABLE WITH AMENDMENTS

This bill would require each gas company to propose a pilot geothermal energy network system that would provide certain residences, especially those in low to moderate income (LMI) neighborhoods, with a highly efficient, low-cost heating and cooling system and electric appliances.

MEA generally supports networked geothermal as one way to help Marylanders electrify their homes and buildings and meet the state's urgent greenhouse gas goals. Unlike networked geothermal pilot projects by Eversource and National Grid in Massachusetts, which are completely funded by utility ratepayers,¹ the Maryland pilot would task the State (MEA) with helping to consolidate state and federal resources to subsidize all behind-the-meter costs.

To the extent that the Strategic Energy Investment Fund or "SEIF" is used to fund the program in the future, it is likely that that expenditure will have a limiting effect on other MEA programs.

MEA has five amendments to the bill as written.

1. On p. 11, lines 10-19, cap total behind-the-meter costs at \$3 million. Pursuing and piloting the use of networked geothermal is laudable and a goal MEA supports. Given that this is a pilot project and there is some uncertainty in which and how much federal money could apply at this time, we propose to cap MEA's total investment to \$3 million total including any federal rebates. Federal rebates under the Inflation Reduction Act can provide a maximum of \$12,400 for low- to moderate-income (LMI) households. IRA rebates, however, will likely cover less than half of the total behind-the-meter costs for heat pumps, water heaters, panel and electric upgrades, installation, appliance replacement, project management, ductwork, and other construction costs. Presumably, under this bill, MEA would be responsible for the remainder of these costs. Costs incurred by the Maryland Environmental Service (MES) to administer the contracts do not appear to be addressed in the bill, raising the question of whether MEA will be expected to shoulder those additional costs as well. Also, there is a category of

¹ See, e.g., Application of Boston Gas Company d/b/a National Grid, D.P.U. 21-24, Mass. Public Service Commission, Exhibits FOH-4 and FOH-5 (December 15, 2021)(utility helps subsidize appliance costs such as stoves and dryers); NSAR Gas C. d/b/a Eversource Energy; Geothermal Demonstration Project D.P.U. 21-53; Budget Update (10/231/23)(HVAC only)

federal money –the Business Energy Investment Tax Credit (ITC)– that would not apply to this pilot project. Under recent guidance from the I.R.S., the Investment Tax Credit –which would cover 30% of total project costs (and greater values under certain conditions such as incorporating domestic content)– may not be available for a geothermal project that is owned jointly by a utility and a property owner, as proposed here.² MEA needs to budget with certainty.

2. Delete mention of \$12 million on p. 11, line 22, such that it reads: “THE ADMINISTRATION SHALL RESERVE ~~\$12,000,000 OF~~ FEDERAL FUNDING FROM THE U.S. DEPARTMENT OF ENERGY [.] As written here, a pilot with \$12M of federal funding could include at least 950 homes (assuming a maximum of \$12,400 per rebate per home). MEA would be responsible for the remaining behind-the-meter program costs, which could exceed \$20 million.

3. Older appliances. Consider adding to the PSC criteria a requirement that the utilities choose a pilot where many of the homes have appliances that are at or near the end of their useful lives.

4. Discontinuation. Consider on P. 9 inserting in subsection D a provision to protect customers in the event a pilot is discontinued such as (3) IN THE EVENT A PILOT SYSTEM IS DECOMMISSIONED OR DISCONTINUED BEFORE THE END OF THE USEFUL LIFE OF THE APPLIANCES INSTALLED UNDER THIS SUBTITLE, THE COMMISSION SHALL MAKE SURE THAT CUSTOMERS PARTICIPATING IN A PILOT SYSTEM DO NOT INCUR ADDITIONAL EXPENSES RELATED TO DECOMMISSIONING OR INSTALLING NEW APPLIANCES.

5. Community-based organization funding. Add “or any other state or federal funding source” to the provision on p. 10, line 26.

MEA urges the committee to issue a **favorable report as amended**. Our sincere thanks for your consideration of this testimony. For questions or additional information, please contact Joyce Lombardi at joyce.lombardi1@maryland.gov or 443.401.1081.

² U.S. Treasury Guidance on Section 48 of the Internal Revenue Code, (Nov. 17, 2023) available at <https://www.federalregister.gov/d/2023-25539/p-376> (specifically excluding a project in which there is different ownership of a geothermal underground loop and a geothermal heat pump system). See, also Proceeding on Motion of the Commission to Implement the Requirements of the Utility Thermal Energy Network and Jobs Act, Rochester Gas and Electric, New York Public Service Department, Case 22-M-0429 (December 2023)(mentioning ITC guidance as reason for initial utility ownership of HVAC system and underground loop during networked geothermal pilot, p. 55).

ABC_UNFAV_HB0397.pdf

Uploaded by: Martin Kraska

Position: UNF



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February 22, 2024

To: House Economic Matters Committee

From: Associated Builders & Contractors

RE: HB 397 - Public Utilities – Thermal Energy Network Systems – Authorization and Establishment (Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act)

Position: Unfavorable

Associated Builders and Contractors (ABC) represent more than 1500 construction and construction-related companies through its four Maryland chapters. Our members believe in the tenets of free enterprise, investing in their workforce and giving back to the communities in which they live, work and play.

House Bill 397 would require each gas company to develop a plan for a pilot thermal energy network system or systems on or before October 1, 2024; requiring each gas company to submit a certain proposal or proposals to the Public Service Commission for approval on or before July 1, 2025; authorizing a municipal corporation, county, or community organization to submit neighborhoods to gas companies for consideration as part of a pilot system.

ABC opposes HB 397, our primary concern with the legislation is around the provisions that would require community benefit agreements (CBA). CBA's impose substantial financial burdens on contractors, particularly smaller and minority-owned businesses, by mandating higher wages and strict compliance measures. These additional costs make projects less economically viable and, in many cases, prohibitively expensive, ultimately deterring investment in communities. While we understand the intentions behind community benefit agreements to promote community development and inclusion, we believe that the current framework outlined in the proposed legislation poses significant challenges and drawbacks for contractors, subcontractors, and ultimately, the communities they serve.

ABC appreciates your consideration and, for these reasons, respectfully requests a **unfavorable** report on House Bill 397.

*Martin "MJ" Kraska
Government Affairs Director
Chesapeake Shores Chapter*

MD 2024 HB 397 Columbia Gas Testimony Final.pdf

Uploaded by: Carville Collins

Position: INFO

**INFORMATIONAL – House Bill 397
Authorizing and Establishing Gas Company Pilot Thermal Energy Network Systems
House Economic Matters Committee**

Columbia Gas of Maryland, Inc. (Columbia) appreciates the introduction of HB 397, legislation requiring natural gas utilities to develop and submit a proposal to the Maryland Public Service Commission to establish a thermal energy network system pilot program in their service territory. Columbia understands up to 13 states may be currently in the planning, regulatory or construction stages of creating thermal energy network systems.

Columbia supports public policies promoting an environment of innovation, research, development and deployment needed for greenhouse gas emissions reductions in Maryland that maintain customer affordability and system reliability. The idea of creating pilot thermal energy network systems or “geothermal pilot programs” should be examined further. Columbia believes the most important factor in pursuing this idea is the cost impact to natural gas utility ratepayers. Through our initial research on this idea, we have found the utility companies pursuing geothermal pilot programs have very large customer bases over which to spread the cost of these systems.

Columbia has undertaken preliminary cost estimates for a geothermal pilot program in its service territory and is concerned with the associated cost and financial impact to its customers. Columbia serves approximately 34,000 customers in the western Maryland counties of Garrett, Allegany and Washington. Initial costs estimates are \$300,000 to \$500,000 for feasibility studies and at least \$10 to \$15 million to create a modest geothermal pilot program in western Maryland. Such a program paid for by a small customer base like ours would result in our customers incurring a significant per customer cost.

Columbia has spoken with the bill sponsor and suggested an amendment that would allow smaller gas utility companies – defined as a company with less than 75,000 customers – to have the option of developing a thermal energy network system pilot program if it determined such a program could be created affordably for its customers.

Columbia supports the following amendment to HB 397 that would make participation in thermal energy network systems optional, rather than mandatory, for smaller gas utility companies in Maryland:

**AMENDMENT TO HOUSE BILL 397
(First Reading File Bill)**

On page 15, after line 3, insert:

7-1007.

(A) THE REQUIREMENTS OF THIS SUBTITLE APPLY TO A GAS COMPANY WITH LESS THAN 75,000 CUSTOMERS ONLY IF THE GAS COMPANY FILES A PROPOSAL FOR ONE OR MORE PILOT SYSTEMS WITH THE COMMISSION.

(B) A GAS COMPANY WITH LESS THAN 75,000 CUSTOMERS ELECTING TO FILE SUCH A PROPOSAL SHALL PROVIDE AT LEAST 60 DAYS WRITTEN NOTICE TO THE COMMISSION OF ITS INTENT TO FILE A PROPOSAL.

With this amendment, Columbia is neutral on HB 397. Adding cost-effective reasonably priced thermal energy network systems to Maryland's energy mix creating an even larger "all of the above approach" to reduce greenhouse gas emissions to meet Maryland's ambitious climate goals is an idea worth examining.

February 22, 2024

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HB397_WARMTH Act_Testimony_Neutral_FINAL.pdf

Uploaded by: Manuel Geraldo

Position: INFO



1000 Maine Avenue, SW | Suite 700 | Washington, DC 20024 | www.washingtongas.com

COMMITTEE: ECONOMIC MATTERS

TESTIMONY ON: HB 397 PUBLIC UTILITIES – THERMAL ENERGY NETWORK SYSTEMS – AUTHORIZATION AND ESTABLISHMENT (WORKING FOR ACCESSIBLE RENEWABLE MARYLAND THERMAL HEAT (WARMTH) ACT)

POSITION: NEUTRAL

HEARING DATE: FEBRUARY 22, 2024

Washington Gas respectfully submits this neutral testimony on **House Bill 397 – Public Utilities – Thermal Energy Network Systems – Authorization and Establishment (Working for Accessible Renewable Maryland Thermal Heat (WARMTH) Act)**

Washington Gas Light Company (“the Company”) provides safe, reliable natural gas service to more than 1.2 million customers in Maryland, Virginia, and the District of Columbia. Washington Gas has been providing energy to residential, commercial, government, and industrial customers for more than 175 years, and currently serves more than 500,000 Maryland customers in Montgomery, Prince George’s, Charles, St. Mary’s, Frederick, and Calvert Counties. Gas employs over 400 people within Maryland, including contractors, plumbers, union workers, and other skilled tradespeople. We strive to improve the quality of life in our communities by maintaining a diverse workforce, working with suppliers that represent and reflect the communities we serve, and giving back through our charitable contributions and employee volunteer activities.

Background

The Company appreciates the opportunity to inform legislation concerning the development of Thermal Energy Network Systems (“TENS”) pilots in Maryland through the Working for Accessible Renewable Maryland Thermal Heat Act (“HB 397”). TENS involve harnessing the low-grade geothermal resource indirectly - in combination with a heat pump - to provide heating and cooling to a building. Temperatures at about 30 feet below the surface remain relatively constant year-round—between about 50°F (10°C) and 59°F (15°C). For most areas in the United States, this means soil temperatures are usually warmer than the air in winter and cooler than the air in summer.¹ Ground-source heat pumps (“GSHP”) are a type of heat pump that use this constant ground temperature of the earth as the heat exchange medium, instead of the outside air temperature.² According to the EPA, geothermal heat pumps can reduce energy consumption --

¹ Department of Energy – Geothermal Technologies Office. [Geothermal Heat Pumps](#)

² Department of Energy. [Geothermal Heat Pumps](#)

and corresponding emissions -- up to 44% compared with air-source heat pumps (“ASHPs”) and up to 72% compared with electric resistance heating with standard air-conditioning equipment.³ TENS entail multiple GSHPs sharing a common system of interconnected looped pipes carrying constant temperature water to and from the premise, and geothermal boreholes deployed at a street segment scale. The idea is that these can be interconnected with additional underground pipe systems and scaled over time to serve entire neighborhoods, municipalities, or territories – much akin to how today’s utility networks operate.⁴

Legislation and regulatory proceedings similar to HB 397 encouraging gas utilities to implement TENS pilots have been passed in several states; Massachusetts gas utilities are leading in the development of these pilots. Both Eversource and National Grid have begun construction on TENS and expect to have a pilot program up and running by the fall of 2024.^{5 6} Other states, including Minnesota⁷ and New York⁸, have passed legislation promoting networked geothermal and utilities in those states have pilot proposals under review for approval with their respective Commissions.

Interest in using thermal energy to heat and cool homes is growing because of the substantial limitations and drawbacks arising from all-electric households and appliances, especially related to the overall impacts on the electric grid required to support electrification. US DOE’s Oak Ridge National Lab recently stated the impact of widespread GHP deployment include:⁹

1. Net reduction in annual electricity consumption and greenhouse gas (GHG) emissions
2. Reduced need for annual power generation
3. Reduced need for power generation capacity and storage capacity
4. Alleviating transmission build-out requirements
5. Reduced summer and winter resource adequacy requirement

Washington Gas is an innovative company and is supportive of leveraging its unique talent and expertise to provide alternative energy sources and believes the deployment of this technology has the potential to offer several benefits to its Maryland customers. While Washington Gas would be among the first gas-only utility to deploy TENS with its customer base, the company has the energy systems expertise to develop new infrastructure, comply with regulatory processes, and bring together stakeholders. However, the Company has concerns with specific provisions in HB 397 and has offered several amendments, included at the end of this document. The concerns are covered in more detail as follows:

- Avoided Cost Implications, Cross Subsidization and Cost Recovery
- Protecting Customer Choice in Maryland

³ Department of Energy – [Benefits of Geothermal Heat Pump Systems](#)

⁴ Home Energy Efficiency Team (HEET). [Networked Geothermal: System Components & Benefits](#) (2023).

⁵ Eversource. [Geothermal Pilot Project in Framingham](#) (Jan. 2024).

⁶ National Grid. [Networked Geothermal Program](#) (Nov. 2023).

⁷ Minnesota. [Natural Gas Innovation Act](#) (2021).

⁸ New York. [Senate Bill S9422](#) (2022).

⁹ Department of Energy – Oak Ridge National Lab [Grid Cost and Total Emissions Reductions Through Mass Deployment of Geothermal Heat Pumps for Building Heating and Cooling Electrification in the United States](#) (November 2023)

- Pilot Requirements Limiting Factors
- Pilot Approval and Stakeholder Engagement

The Company is taking a neutral stance on HB 397 and is optimistic that a fair and equitable TENS pilot program can be developed in Maryland.

- **Avoided Cost Implications, Cross Subsidization and Cost Recovery**—Unlike ASHPs, TENS do not burden an increasingly constrained electric grid and thus helps to avoid the high costs otherwise needed to upgrade the State’s electricity generation, transmission, and distribution system to serve growing electric heating loads. In particular, the State’s electric grid is projected to switch to become “winter-peaking” (instead of summer-peaking) in the case of high ASHP adoption.¹⁰ A winter system peak is driven largely by the use of electric heating during the coldest hours of the year, often when renewable energy is not outputting to the grid. TENS can alleviate stress on the grid during this new peak, lowering the amount of electricity generation, transmission, and distribution capacity needed to accommodate the winter peak. HB 397 does not explain which mechanisms the State may use to fairly compensate gas customers or incentivize the use of such systems in the interest of avoiding these significant grid upgrade costs, nor does it specify whether gas customers will be compensated at all. For reference, in November 2023, Con Edison (a combination gas and electric utility) in New York proposed to its regulators that network costs for its thermal energy network pilots should be recovered from both its electric and gas customer classes, in order to minimize overall rate impacts and avoid cross-subsidization, due to anticipated reductions in electricity usage and overall electric infrastructure needed to serve the avoided incremental load.¹¹

Cost Recover and Cross Subsidization

A TENS pilot by a gas-only utility is unprecedented in Maryland, and while the concept is promising, it needs to be squared with existing and proven utility regulatory processes and financial structures. HB 397 does not consider what may happen to both the utility and its participating customers if the pilot system is not made permanent. Cost recovery for the utility and protections for the customers must be guaranteed to ensure no parties are burdened by the undeniably high costs associated with testing this concept on behalf of the State

Customer Choice

If HB 397 is passed, the Company is open to partnering with customers that are interested in participating in an initial TENS pilot. However, the legislation does not examine what may happen to customers that choose to opt-out of a TENS pilot. Customer choice must be paramount when

¹⁰ Maryland Public Service Commission. [PSC Electrification Study Scenario Shows Moderate Growth in Electricity Demand, Significant Gas Demand Reduction](#) (Dec. 29, 2023).

¹¹ Con Edison. Case 22-M-0429, Proceeding to Implement the Utility Thermal Energy Network and Jobs Act. [STAGE 1 FILING – FINAL UTEN PROJECT PROPOSALS](#) (November 30, 2023). “As proposed in the January UTEN Proposal, the Company proposes to recover costs from electric customers through the Monthly Adjustment Clause for Company customers and through a surcharge for New York Power Authority customers...The rate impact for the pilots and UTENs will, in the longer term, be lower when recovered across the larger electric rate base than the gas rate base and paired with the offsetting impact of increased electricity usage.”

piloting relatively unproven technologies. Some customers may not wish to participate in a pilot and may prefer to continue using natural gas. The Company's customer base continues to grow in Maryland, and Marylanders continue to express interest in new natural gas connections. There is a natural hesitancy for customers to bring new energy sources and appliances into their homes and HB 397 offers no guarantee that they will be provided the same comfort and reliability as their prior configurations, or whether they will be able to revert to their original appliances if the pilot is unsuccessful. In Massachusetts, Eversource Energy's TENS pilot program, which is the furthest along of any such pilot in the country, had a customer participation rate of ~80% and guaranteed that participants can continue using natural gas for their stoves, water heaters, and clothes dryers for the pilot's duration and may return to their original equipment and gas service afterwards.¹² Using networked ground-source thermal energy to heat and cool homes is a nascent technology and customers that may be unsure about the pilot should be assured that they will not be forced to convert their appliances if they do not want to; this will encourage participation and help to facilitate buy-in from local communities.

TENS Pilot Requirement Limiting Factors

The Company has not done a full evaluation of the requirements laid out in HB 397, but it is clear that the 80% LMI threshold and requirement for a pilot system to be at the "end of the gas system" within the legislation will meaningfully restrict the segments of the gas network for which the initial pilots may be proposed. While LMI customers can benefit from a TENS pilot, the Company is concerned about energy affordability and the long-term financial sustainability of these systems. Proponents point out that GSHPs have no variable fuel costs but, as seen in Massachusetts, pilot-scale TENS have high upfront costs, costing between \$70,000-\$100,000 per participating customer.¹³ ¹⁴ In Massachusetts, much of this cost is shouldered by a mix of state and federal funding sources, as well as surcharges assessed on non-participating customers. This model is not sustainable if the costs of future systems do not fall with scale, potentially straining the State's budget and, by proxy, the State's taxpayers in the short-term, and burdening participating customers and the utility in the long-term. The LMI requirements in HB 397 would mean that, in the case of financial unsustainability, these costs would be placed on select neighborhoods with the highest energy burdens.

Additionally, the requirements would not maximize the effectiveness of the pilot. The purpose of a pilot is to explore the benefits and physical operations of a TENS, and in order to productively do that the pilot must be able to include a diverse customer base, including multiple building types and sizes (e.g., single-family homes, multi-family, commercial, mixed-use, etc.). Eversource's pilot is designed to serve a neighborhood with several different types of buildings, including residential homes, a community college, and the local fire department, for a total of five (5)

¹² Eversource. [Geothermal Pilot Reference Guide](#)

¹³ National Grid. [Geothermal District Energy Demonstration Program](#) (Dec. 15, 2021). The Massachusetts DPU approved a budget not to exceed \$15.6 million. The National Grid pilot intends to serve 150-200 customers, and therefore has a cost to customer ratio of \$78,000 - \$104,000.

¹⁴ Eversource Energy. [General Increase in Base Distribution Rates for Gas Service and a Performance Based Ratemaking Mechanism](#) (Oct. 30, 2020) The Massachusetts DPU approved Eversource's proposed geothermal demonstration project scenario 2 with a budget of \$10,261,606 and a customer count of 140, making the cost to customer ratio \$73,297.19.

commercial buildings and 32 residential buildings that previously received delivered fuels (heating oil or propane) or natural gas services.¹⁵ Maryland should take a similar approach to fully understand what the potential benefits and drawbacks are of a TENS pilot. This approach is consistent with the bill’s goal to facilitate the proposal of TENS pilots in communities that express interest in participating, including those that do not meet the unnecessarily stringent and contradictory LMI requirements.¹⁶ It is important for emerging technologies, such as TENS, to be accessible and applicable for a broad range of customers. While the economics and operational feasibility of TENS remains unproven and require real-life evaluation in Maryland, the State should refrain from preemptively limiting the scope of customer participation during this evaluation period.

Jobs and Workforce Alignment

TENS require drilling boreholes and laying pipe in the rights-of-way and operating a shared utility network. These are all skills and competencies held by today’s gas utilities and their workforces, who will be critical to enabling clean energy in Maryland. The Company’s expertise in these areas should be leveraged to evaluate and implement TENS.

Approval and Stakeholder Engagement

HB 397 limits the parties whom the Public Service Commission must consult on whether a TENS should be made permanent at the end of the pilot period to the Maryland Energy Administration (“MEA”) and Maryland Office of People’s Counsel (“OPC”). The gas utility operating the TENS pilot and the participating customers will also have important perspectives on the benefits and drawbacks of the TENS concept and must be involved in the process of determining if a pilot is made permanent. This should be codified in HB 397.

Conclusion

At Washington Gas, our core values are safety, collaboration, integrity, inclusion, and learning. The Company is committed to working with stakeholders to help achieve Maryland’s GHG emission reduction targets. There is a role for existing and future technology innovation to support diverse pathways to decarbonizing Maryland. and the State can leverage existing infrastructure to preserve affordability, reliability, safety, and security of service. The Company is advocating for TENS pilots to be explored in a responsible way to benefit the State’s energy customers and ecosystem.

Washington Gas agrees that networked geothermal energy systems could ultimately be both beneficial and promising for customers, although questions and challenges remain. We look forward to working with the Committee if the legislation moves forward. Washington Gas respectfully requests the attached amendments be considered and included in HB 397. Thank you for your consideration of this information.

Contact:

¹⁵ Eversource. [Geothermal Pilot Reference Guide](#)

¹⁶ On page 8 of HB 397 it states, “A municipal corporation, county, or community organization may submit neighborhoods to gas companies for consideration as part of a pilot system.”

Manny Geraldo, State Government Relations and Public Policy Manager
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ADDENDUM: PROPOSED AMENDMENTS

Amendment 1 – Definition of public interest

Context:

TENS pilots should be explored for those areas where they can provide the greatest net benefit to the public. Approving projects that do not meet this threshold would not be in the best interest of Maryland's ratepayers.

WGL Position:

"Public interest", in the context of 7-1002 (C)(2): "if the Commission determines that a proposal is in the public interest, the Commission shall approve the proposal", should be defined to mean that the projected benefits of the pilot will outweigh the projected costs, calculated by using the same test that the Commission must use to determine the projected costs and benefits of the projects proposed for inclusion.

Proposed Amendment:

WGL proposes the following section be amended as shown by red text:

Insert a new definition 7-1001(K) that states: **A pilot system is in the "public interest" if the net benefits are greater than the net costs using the cost test described under 7-1002 (C)(3)(I).**

Note: the existing 7-1001 (K) will become 7-1001 (L)

Amendment 2 – Allowing "pilot system" to include any area of Maryland

Context:

About 1 in 10 Maryland households use heating oil, propane, or kerosene for heating,¹⁷ fuels which are commonly delivered via truck to homes that are not connected to the State's gas system. The absence of gas infrastructure should not disqualify customers from having access to TENS, nor should it disqualify utilities from developing TENS pilots in areas that are well suited to the technology beyond LMI communities only

WGL Position:

The current definition of "Pilot System" includes "... to Replace Gas Infrastructure with a Thermal Energy Network System", implying that the only pilots that can be proposed are in areas currently served by natural gas. Gas companies should be able to offer pilot systems in other areas, such as those currently served by electric resistance heating, fuel oil and propane, allowing for greater GHG reductions and potential cost reductions to end-users.

Proposed Amendment:

WGL proposes the following section be amended as shown:

7-1001 (I) should read: "Pilot System" means a pilot thermal energy network system developed by a gas company ~~to replace gas infrastructure with a thermal energy network system.~~

¹⁷ EIA. [Maryland State Energy Profile](#). December 21, 2023

Amendment 3 – Key dates for pilot program

Context:

TENS are a relatively new technology that are currently not offered by the State's electric, gas, or water utilities. The State's utilities should be given sufficient time to properly assess, design, and develop TENS pilots, including engaging external consultants, to ensure pilots best serve the public interest.

WGL Position:

Key pilot program dates should be delayed in order to provide sufficient time for utility planning.

Proposed Amendment:

WGL proposes the following section be amended as shown by red text:

7-1002 (A)(1) should read: On or before **July 1, 2025** ~~October 1, 2024~~, each gas company shall:

7-1002 (B)(1) should read: On or before **March 31, 2026** ~~July 1, 2025~~, each gas company...

7-1002 (C)(1) should read: On or before **September 1, 2026** ~~December 31, 2025~~, the Commission may approve, approve with modifications, or reject a proposal.

7-1002 (F)(3) should read: Funding under this Subsection may be provided only before **January 1, 2027** ~~October 1, 2025~~

Amendment 4 – Minimum number of low- and moderate-income (LMI) customers and related requirements for pilot system proposals

Context:

It is important for LMI households to be able to reap the benefits of novel energy technologies such as TENS. It is also important for novel energy technologies such as TENS to remain accessible and maximize benefits to all customers in Maryland.

WGL Position:

The requirement for all pilot proposals to serve at least 80% LMI customers should be removed and instead require that at least one (1) pilot proposal from each gas utility must serve at least 40% LMI customers. Gas utilities should not be required to propose any additional pilots, but any additional pilot proposals will not have an LMI requirement and gas utilities may propose any number of additional pilots. This would allow utilities to propose pilots for geographic areas and customers that considering other factors.

Proposed Amendment:

WGL proposes the following section be amended as shown by red text:

7-1002 (B)(1) should read: On or before ~~July 1, 2025~~ **March 31, 2026**, each gas company shall submit ~~either at least one or two proposal-proposals~~ **at least one** proposal for a pilot system to the Commission for approval.

7-1002 (B)(2) should read: ~~A~~ **At least one** proposal for a pilot system from the gas companies shall ensure that at least ~~40-80%~~ **40-80%** of its customers are from low- or moderate-income housing.

Amendment 5 – Customer solution retaining gas service

Context:

Eversource Energy (MA) has stated that customers participating in their networked geothermal pilot program, which is the furthest along of any networked geothermal pilot in the country, are able to continue using natural gas for stoves, water heaters, and clothes dryers.¹⁸

WGL Position:

Customers who opt out before a pilot system is built should be able to choose to keep their existing gas appliances. This would make the pilot program less risky for natural gas utilities and their customers and grant more freedom to the participating neighborhood by ensuring gas can still be delivered to the buildings for gas-powered appliances if customers choose.

Proposed Amendment:

WGL proposes the following section be amended as shown by **red** text:

Insert a new section 7-1002 (B)(3)(I) that states: **Customers that choose to opt out of a pilot system before the proposal for the pilot system is submitted may choose to retain any and all existing natural gas appliances, at their choice.**

Amendment 6 – Focus pilots on appropriate areas of gas system

Context:

Defining what qualifies as the "end of the gas system" is nuanced, and keeping this requirement may unduly limit the areas of their networks for which gas utilities can propose cost-effective and beneficial projects.

WGL Position:

The requirement for the proposal to address neighborhoods at the end point of the gas system should be removed. Removing this language allows for other types of customers to be considered for a TENS pilot, including commercial buildings.

Proposed Amendment:

WGL proposes the following section be removed:

¹⁸ Eversource. [Geothermal Pilot Reference Guide](#) "We don't intend to touch any hot water systems, gas stoves or gas dryers."

Remove 7-1002 (B)(6)(IX): Neighborhoods at the end point of a gas system where a full transition from gas systems to electrification could be facilitated within the pilot period or within 5 years after the pilot period concludes;

Note: All subsequent numerals in 7-1002 (B)(6) should be renumbered.

Amendment 7 – Commission approval of pilot systems

Context:

Utilities have to know they will receive direction from the Commission in the form of rejection or approval with or without modifications by a certain date.

WGL Position:

It should be clarified that the Commission must issue a decision with regards to pilot proposals. This will ensure that gas utilities get a decision from the Commission on their proposed pilots by December 1, 2025.

Proposed Amendment:

WGL proposes the following section be amended as shown by **red** text:

7-1002 (C)(1) should read: On or before **September 1, 2026** ~~December 31, 2025~~, the Commission **must** ~~may~~ approve, approve with modifications, or reject a proposal.

Amendment 8 – Decision to make pilot systems permanent

Context:

As currently constructed, the bill limits those who should advise the Commission on whether a pilot system should be made permanent at the end of the pilot period to the Maryland Energy Administration (“MEA”) and Maryland Office of People’s Counsel (“OPC”). . This arrangement should be expanded to explicitly require inputs from the utilities who will own and operate the TENS pilots and the participating customers that take service under these pilots.

WGL Position:

The gas utility that owns a TENS pilot and customer that owns the connected heat pump should be involved in determining whether a pilot system should be made permanent. The current arrangement ignores the expertise that gas utilities will gain operating and maintaining TENS, which should factor into decisions concerning the long-term viability of specific projects. Similarly, participating customers who will be reliant on the systems for heating and cooling should they be made permanent must be given the opportunity to comment on whether the technology is acceptable for meeting their future energy needs.

Proposed Amendment:

WGL proposes the following section be amended as shown by **red** text:

7-1002 (D)(2)(I) should read: Once the 2-year period under paragraph (1) of this subsection has passed, the Commission, in consultation with the Administration, ~~and~~ the Office of People’s Counsel, **the electric company, gas company, or water company that**

owns and manages the pilot system, and the participating customers, shall determine whether to make the pilot system permanent. This decision should include utility monitoring metrics on efficiency, cost and robust customer satisfaction determinants over the course of at least three heating and cooling seasons to determine levels of success and next steps. Recovery for these activities will be included in the recovery mechanism.

Amendment 9 – Cost recovery for non-permanent systems

Context:

A prudent plan for a pilot system includes a description of the procedure that must be followed if a pilot project is not made permanent. The utilities and their customers must be protected in this scenario.

WGL Position:

The bill should contain language stating that the gas utility will be able to recover all costs associated with decommissioning the pilot system in an accelerated fashion if it is determined that the pilot system will not be made permanent. This would allow gas utilities to recover all costs associated with a TENS pilot if a given pilot system is not made permanent. For example, costs related to system decommissioning.

Proposed Amendment:

WGL proposes the following section be amended as shown by red text:

Insert a new section 7-1002 (D)(2)(III) that states: **If a pilot system is not made permanent, as described under subparagraph (I) of this paragraph, the Commission shall approve recovery of all costs necessary for a gas company to comply with this decision**

Amendment 10 – Customer access to program funding

Context:

The bill draws on EmPOWER and other funding sources to finance home electrification and energy efficiency upgrades. Financing like-for-like gas appliance replacements or upgrades and weatherization upgrades will allow an ‘apples-to-apples’ analysis of energy savings and costs with modern equipment.

WGL Position:

Weatherization and appliance replacement funding should be able to be given to customers who choose to opt out of a TENS pilot. It should also finance like-for-like gas appliance replacements or upgrades and weatherization upgrades that can deliver energy efficiency and emissions savings to customers who choose to opt out of pilot projects.

Proposed Amendment:

WGL proposes the following section be amended as shown by red text:

Insert a new section 7-1003 (A)(2) that states: **The Administration shall ensure that customers in a given neighborhood that opt out of a pilot system and choose to retain their gas service have access to funding sources and energy savings measures described in 7-1003 (A)(1).**

Note: The existing 7-1003 (A)(2) will become 7-1003 (A)(3), and the existing 7-1003 (A)(4) will become 7-1003 (A)(5).

Amendment 11 – Cost recovery for proposal development

Context:

Allowing utilities to recover necessary costs associated with proposal development will incentivize them to propose new pilot systems.

WGL Position:

The requirement that the costs incurred from developing a proposal must be “reasonable and in the public interest” as determined by the Commission should be removed and instead account for the expected costs as described in this bill. The requirement for carrying costs to be appropriate as determined by the Commission should be removed. This more fully aligns the gas utility with its costs.

Proposed Amendment:

WGL proposes the following section be amended as shown by **red** text:

7-1002 (G)(3) should read “the Commission shall approve a request under paragraph (1) of this subsection on finding that the proposed plan and costs are **necessary to meet and respond to the requirements outlined in this section.** ~~are reasonable and in the public interest.~~”

7-1002 (G)(4) should read “At a gas company’s next rate case proceeding following the approval of a request under this subsection, the Commission shall authorize recovery of prudently incurred costs associated with developing the proposal and any carrying costs ~~that the Commission determines are appropriate.~~”