American Petroleum Institute
Northeast Region

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Senate Education, Health, and Environmental Affairs Committee
2 West
Miller Senate Office Building
Annapolis, Maryland, 21401

IN RE: Comments to SB 528, An Act Concerning Climate Solutions Act Now 2022

Dear Senator Paul G. Pinsky, Chair; Senator Cheryl C. Kagan, Vice Chair; and Committee Members:

Thank you for this opportunity to provide comments relative to SB 528. While this is a comprehensive bill, the comments that follow focus on the legislation's "requirement that all new buildings meet all water and space heating demand without the use of fossil fuels," and the "building emissions standards." The American Petroleum Institute (API)[1] opposes the inclusion of this language in SB 528 and strongly encourages the committee to refrain from passing a ban on the use of natural gas in new building construction and encourages the legislature to preserve consumer choice with respect to space- and water-heating options.

Need to Preserve Consumer Choice

Policymakers should strive to give consumers options. Competition is imperative to protect consumers while driving innovation, ingenuity and progress. Legislators should not pick winners and losers but should allow resources and technologies to compete. Free market policies provide the consumer with options to select products that best fit their unique circumstances. This legislation would remove natural gas from the space- and water-heating markets, stripping the consumer of the right to select a heating fuel that is comfortable, economical and reliable. A ban on heating fuels represents the worst type of ban because it effectively affords consumers only one option – electric heating. Additionally problematic is the fact that a ban when there is only one substitute leaves consumers with no options and no hedge if the cost of the substitute rises due to increased demand. API believes Maryland's current energy policy that allows consumers to choose both natural gas and electric options is reasonable and is good public policy.

Potential for Significant Cost and Reliability Concerns

As you analyze this legislation, API encourages you to consider potential cost impacts this bill may have on consumers, especially those in overburdened communities. This legislation will likely increase building and operating costs for commercial, industrial, and residential buildings, including affordable housing. According to research conducted for the National Association of Home Builders, all-electric homes cost more upfront in

[1] The American Petroleum Institute represents all segments of America's natural gas and oil industry, which supports more than 11 million U.S. jobs. Our nearly 600 members produce, process, and distribute the majority of the nation's energy. API members participate in API Energy Excellence,[1] through which they commit to a systematic approach to safeguard our employees, environment and the communities in which they operate. Formed in 1919 as a standards-setting organization, API has developed more than 700 standards to enhance operational and environmental safety, efficiency, and sustainability.

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comparison to gas homes.[2] Specifically, the overall range of estimated electrification costs for an electric reference house compared to a baseline gas reference house in cold weather climates was between $11,000 and $15,000.[3] The higher costs in colder, heating-dominated climates are due to the need for more expenisive heat pumps rated to operate in colder temperatures. The more expensive electric equipment can also result in higher energy use costs by $84 to $404 annually compared to a baseline gas house, and by $238 to $650 annually compared to a gas house with high efficiency equipment. Consumers in colder climates will therefore likely be faced with higher upfront construction costs and higher operating costs throughout the life of the equipment.[4]

The legislation will also require electric heating systems for certain existing public and privately owned commercial and multifamily residential buildings (25,000 plus square feet) by 2030 and 2035. Requiring all new buildings to be all electric is straightforward enough; however, requiring that existing buildings be retrofitred is another matter entirely. The costs can be very high—perhaps in the tens of thousands of dollars per unit. In many homes the electric system does not have sufficient capacity and would need to be completely redone.[5]

An all-electric heat mandate is bad public policy. Maryland is looking toward a future with greater electrification in the transportation and building sectors. These policies will likely increase the demand for electricity significantly, which in turn may force the state to rely on the the use of old and less efficient power plants in other states. This committee must realize and appreciate that policies that increase electrification may also necessitate investments in large-scale electric transmission infrastructure which is expensive and frequently controversial. Electrification can also result in increased imports and utilization of power derived from carbon-emitting resources.

A move to all-electric heating will also leave Marylanders at the mercy of a power grid that is increasingly reliant on intermittent renewables. We have seen the potential consequences of this in Texas and California – both of which rely heavily on wind and solar. When these resources underperform, grid stability and reliability can be compromised and residents can be left in the dark and cold.

A study from GTI Energy found that power system outages are more than 100 times more frequent than gas system outages. It further notes that extreme weather is more likely to impact power systems than gas

[2] *See* https://www.nahb.org/-/media/NAHB/nahb-community/docs/committees/construction-codes-and-standards-committee/home-innovation-electrification-report-2021.pdf.

[3] The study included the cold weather climates of Denver and Minneapolis.

[4] *Ibid*. Climate zone had a strong influence on both construction costs and energy use costs. In colder climates, heat pumps with variable refrigerant flow rated for operation during low outdoor temperatures are needed. Often referred to as cold climate heat pumps, these systems are more expensive: $8,000-$9,000 more compared to a gas furnace.

[5] Two reports out of California, one from San Francisco and the other from Palo Alto, provide additional examples of the potential cost implications of all-electrification. In April 2021, San Francisco's Budget and Legislative Analyst's Office issued a memo that notes that the estimated costs of electrical appliance retrofitting of homes range from $14,363 per housing unit (both multi-family and single-family units) to $19,574 for multi-family units, and $34,790 for single-family homes at the higher end, and that the city-wide cost to retrofit all residential units currently using natural gas-fueled appliances with those fueled by electricity ranges from $3.5 to $5.9 billion. Budget and Legislative Analyst's Office, *Memo to Supervisor Mar* (Apr. 22. 2021), *available at* https://sfbos.org/sites/default/files/BLA.ResidentialDecarbonization.042221.pdf. In November 2016, a report submitted to the City of Palo Alto estimated that to accommodate electric space heating in California, it would cost $4,700 to upgrade the electricity service for an existing single-family building and $35,000 for a low-rise multifamily building. Peter Pernijad, *Palo Alto Electrification Study*, TRC Energy Services (Nov. 16, 2016) *available at* https://www.cityofpaloalto.org/files/assets/public/development-services/advisory-groups/electrification-task-force/palo-alto-electrification-study-11162016.pdf.

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systems.[6] This means that an all-electric home and building requirement could leave residents more exposed to heating system failure. The use of natural gas for heating provides a hedge against the potential reliability challenges associated with an aging and overburdened grid that relies heavily on intermittent generation, and therefore the state should not ban it. The use of gas for heating provides a hedge against potential reliability challenges.

Unintended Consequences

Legislators should appreciate that moving the state to electric heat and heat pumps can have the profound and unintended consequence of incentivizing customers to purchase and use backup generators that run on fossil fuels. These generators can be loud, dangerous, and costly if operated improperly. For example, one county in Texas reported that it had 300 suspected cases of carbon monoxide poisoning during Winter Storm Uri last February, many of which were related to residents running backup generators indoors to stay warm when their electric heating systems were not functioning.[7]

Maryland lawmakers must first understand and appreciate the economic and environmental cosequences of additional backup generators before embarking on a future of only electric heat in new construction. Additionally, the state should fully appreciate that a policy that requires the installation of heat pumps can result in building construction delays and increased costs as global demand for heat pumps increase (particularly as other states and countries consider implementing an all-electric building policy).

Conclusion

For all of the reasons outlined above, API respectfully *opposes the bill* as introduced because it removes consumer choice with respect to heating fuels, can be costly, and can produce unintended results.

Respectfully submitted,

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[6] *See* https://www.gti.energy/wp-content/uploads/2018/11/Assessment-of-Natural-Gas-Electric-Distribution-Service-Reliability-TopicalReport-Jul2018.pdf.

[7] *See* https://www.bbc.com/news/world-us-canada-56095479.