Stone Mountain Technologies, Inc.

June 22, 2023

Ann Bailey, Director
Energy Star Labeling Branch
Environmental Protection Agency
1201 Constitution Avenue NW
Washington DC 20004

RE: Energy Star Residential Furnaces & Central Air Conditioners Sunset Proposal
Comments by Anesi Gas Heat Pumps (Stone Mountain Technologies, Inc.)

Anesi Gas Heat Pumps (manufactured by Stone Mountain Technologies, Inc.) is a US company, manufacturing gas-fired absorption cycle heat pumps in Johnson City, Tennessee. With over a decade of technology and product development, and with generous support from the US-DOE (among many others), Anesi is now opening its first facility to manufacture gas heat pumps (GHPs) for the North American market.

Anesi GHPs offer 140% Annual Fuel Utilization Efficiency (AFUE) and are rated to operate without backup as low as minus 40 degrees (F/C), while keeping the home comfortably warm. Anesi's initial application is a "furnace-combi", replacing a single-family home's furnace and water-heater. The product will be offered at a cost-effective price, and enables HVAC contractors to replace furnaces, boilers, and water heaters in a simple manner. Other applications for residential and commercial buildings are in the works.

The homeowner will enjoy immediate 30-50% reductions in heating utility bills and carbon footprint, with no significant change to their home's infrastructure and the same gas-heating comfort they have always experienced. Deployed at scale, many utilities, particularly in cool and cold climates, believe this is an important product to enable immediate energy savings, as well as create an economically viable pathway for permanent and deep GHG reductions.

Anesi is backed by one of the largest climate-tech investment firms – Energy Impact Partners – with over $3 billion in investments and assets under management. The larger gas industry is well-engaged in energy transition by beginning to transform the energy product delivered via its (pipe) grid. The North American Gas Heat Pump Collaborative (presently comprised of utilities representing more than a third of all gas meters in the US and Canada) is deeply committed to facilitating the deployment of GHP technology at scale.

Anesi's GHP offers strong economic value to building owners, including the lowest cost of delivered heat in cool/cold climates, as well as a carbon footprint that equals or is better than all other heating technologies, including electric air-source heat pumps. The Energy Star label is critical to providing consumers with a simple and easily recognizable signal of environmental responsibility and value. As gas heat pumps begin to roll out at scale over the next few years, it is inadvisable and unnecessarily confusing to the market to create a gap in the ability of consumers to find and select gas-fired products with this label.

The language of the proposed specification suggests that Energy Star may quickly eliminate gas furnaces and central air conditioners (CAC) from access to the label. Thus, it appears that EPA is pushing all consumers towards a single technological solution – that of an electric heat pump for space heating in all climates. If this is the case, we can identify several problems with this approach:

- Instead of setting broad outcome goals (e.g. "decarbonization"), this presumes that Energy Star already knows best which technology or fuel to pick.

- It eliminates opportunities for other players in the HVAC market (outside of the winning technology "pick") to innovate and solve the underlying problem.
- It assumes a one-size-fits-all, single-technology approach is best for every climate and local energy-mix/market condition.
- It ignores the life-cycle cost to the consumer to provide the end-user's heat. Electric heat pumps for heating in colder climates make the (former) gas customer's operating costs significantly higher, both immediately and throughout the life of the product. In the lifecycle cost equation, this greater operating cost renders meaningless any upfront installation cost subsidies that utilities or governments may provide. For particularly cold climates, this approach further ignores the need for a backup solution when EHPs are unable to extract ambient heat. The choice of backup may be resistance electric, which will create further stress for the electric grid. A fossil fuel-based appliance for backup can only exist where the homeowner is allowed to maintain their gas meter.
- It fails to account for the opportunity to immediately lower winter-heating operating costs for consumers through any new technology, such as gas heat pumps. Relatively poor unit economics is not a good motivator of consumer change, regardless of the label or brand.
- It presumes that, to lower GHGs for winter heating, there is only one acceptable technology – electrification. By extension this also assumes:
    - That the multi-decade task of upgrading the electric grid by large multiples is the most economically justified method necessary to handle the massive load increases in winter driven by EHPs deployed at mass scale.
    - That gas utilities, whose chief function is to economically and reliability deliver massive quantities of energy (especially as needed for winter heating) with an existing and already-paid-for energy grid, are incapable of changing the nature of the energy product they deliver. This assumption ignores the innovations in "green molecules" which are already well underway at these utilities.
    - Ignores the immediate and large reductions in GHG emissions that gas heat pumps deliver, even when using 100% natural gas. Conversely, EHPs will cause GHG increases in the near term in most areas due to the continued marginal generation of electricity via fossil fuels.
    - It also ignores how even small blends of increasingly clean molecules in pipelines deliver outsized reductions in GHGs when paired with gas heat pumps. The result is that gas heat pumps immediately offer a competitive, and in many cases, superior GHG reduction compared to EHPs. This is true at any scale but is especially profound at large scale.
- It cuts off the ways in which future innovations can bring to bear the best of both gas absorption and vapor compression heat pump cycles (which have different and complementary strengths), achieving the most economically efficient and environmentally beneficial outcome for everyone.

Energy Star has previously focused mainly on site-based energy efficiency metrics for HVAC appliances, and this has been largely facilitated by the fact that gas and electric energy sources and their associated technologies have tended to "stay in their own lanes". However, since decarbonization is a central part of the agenda, it is time to comparatively sort through the issues of source-energy and the technology types that can ostensibly deliver the same end-benefits, but by very different means. A ton of CO_2e emitted by a consumer's selection of any particular technology and flipping on the switch is the same, whether it is driven by gas or electricity. This larger metric of total emissions should be a major part of the discussion regarding how Energy Star policy is formulated going forward.

Anesi Gas Heat Pumps requests further discussions with Energy Star to provide additional information and specific recommendations on these issues. Please contact:

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