

October 9, 2018

Via electronic mail: vendingmachines@energystar.gov

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Re: *ENERGY STAR Product Specification for Refrigerated Vending Machines Draft 1
Version 4.0*

Founded in 1936, the National Automatic Merchandising Association (NAMA) is the association representing the \$25 billion U.S. convenience services industry, with its core membership being comprised of owners and operators of vending machine companies. With nearly 1000-member companies – including many of the world’s most recognized brands – NAMA provides advocacy, education and research for its membership. NAMA members include nearly all of the U.S. based vending machine manufacturing community and their largest customers.

Vending machine manufacturers are proud of the energy efficiency gains they have made in the last several years. Manufacturers have replaced lighting, compressors, and accessories making vending machines of today unrecognizable in terms of energy usage compared to machines of “yesterday.” In fact, unique to the vending machine industry compared to other product categories, because of both the commercial requirements of many customers, and the economics of eliminating variation in production nearly all equipment produced in some categories meet ENERGY STAR requirements. NAMA very much appreciates the opportunity to provide comments on the *ENERGY STAR Product Specification for Refrigerated Vending Machines Draft 1 Version 4.0*.

NAMA understands that since the publication of the last ENERGY STAR specification, the Department of Energy has released new minimum efficiency requirements with some exceeding current ENERGY STAR’s usage levels, precipitating the desire to issue Version 4.0. However, given the challenges the industry faces transitioning to low GWP refrigerants we believe ENERGY STAR Specification 4.0 to be premature.

NAMA believes that ENERGY STAR can only accurately develop and implement a new standard after the vending machine industry has navigated the complex transition from R-134a to a propane refrigeration system, the only currently viable long-term option. It would be appropriate for ENERGY STAR to begin a new product specification only after the industry has successfully transitioned to a low GWP refrigerant and the associated standards organizations have modified their standards to allow for unrestricted placement and operation of low GWP systems. Therefore, we seek a delay in the product specification process for Version 4.0 until 2022.

NAMA disagrees with the conclusion in the draft specification that “*CO₂ and Propane are the preferred alternatives the industry is exploring.*” After reviewing options presented by the EPA Significant New Alternatives Policy Program, the California Air Resources Board, and the European Union, taking into consideration global acceptability, availability of components, and financial considerations, the only feasible low GWP refrigerant is propane.

Specific to the proposed specification, many manufacturers have commented that the proposed Maximum Daily Energy Consumption for all classes of machines to be too much of a decrease in allowable energy consumption and very difficult to meet in light of the fact that most manufacturers are already using some of the highest efficiency components for their application available. Furthermore, hazard mitigation needed to safely place a propane cooled machine into the marketplace will require a currently unknown amount of energy.

The draft correctly identifies energy savings that low GWP refrigerants offer yet fails to acknowledge real-world challenges of placing a vending machine cooled with propane into service.

As you know, R-290 refrigerant is a flammable chemical designated A-3 by ASHRAE 34. In addition, UL 541, CSA C22.2 No. 128 and ASHRAE 15 have authority over these products. They are considered commercial products and must comply with these safety standards in the US and Canada. One attribute in common with both standards is the requirement for manufacturers to inform all users that the machines are not recommended to be placed in locations of ingress, egress, hallways, or lobby areas of public commercial buildings. These restricted locations are the primary locations for many of NAMA member’s refrigerated vending machines and compliance would greatly limit the marketing and sales of these products, limit consumer convenience and the industry’s viability. In addition, owners of commercial buildings must comply with local, state and national building and fire codes which reference the applicable ASHRAE, UL and CSA standards, imposing yet another challenge.

Until the UL 541, CSA 128, and ASHRAE 15 standards are changed, our industry is unable to fully transition to a low GWP refrigerant. It is not uncommon for changes and/or updates to UL and CSA standards to take 2 years or more and changes to ASHRAE standards can take up to 3 years. Thus the request for a delay until at least 2022. Until these standards are changed, it would be impossible for our manufacturers to engineer all models, understand and manage energy consumption profile, transition the purchasing of components and production, and fully transition all products to this new low GWP refrigerant.

In working with ASHRAE and UL NAMA understands that these standards will only be modified after laboratory research demonstrates that a leak of R-290 can be mitigated sufficiently so that the leak does not create a potential fire hazard.

NAMA and NAMA members commissioned a research study in June 2018 overseen by a NAMA technical working group to undertake rigorous laboratory tests of two specific leaks sizes under various characteristics; over 50 tests were performed. The results of these tests were not sufficient to yield a change to either ASHRAE or UL standards. Thus, additional machine and mitigation solutions must be developed, engineered, built, and tested. The NAMA technical working group

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continues to actively work on this issue and is planning to conduct a second round of laboratory tests in the next 3 – 6 months.

The task at hand is to develop engineering solutions that disperse leaked R-290 to a nonflammable level. Mitigation options will likely include the usage of various sensors (pressure and gas), fans, notifications, and other engineered devices. All of these options will require energy to operate and will be required to be placed within machines for safety. Given that we are unsure as to how much energy will be required to safely deploy propane cooled vending machines, we believe EPA should delay issuing a new ENERGY STAR standard until the industry is able to develop a technically proven solution, a successful change to both the UL and ASHRAE standards, and fully understands and can quantify the amount of energy needed for mitigation technologies.

UL 541 prohibits vending machines from being placed in specific locations as referenced earlier in this letter. This language will have to be amended before the industry can fully transition. Modification to UL 541 will also require changes to ASHRAE 15. To accomplish both of these it will require additional research, testing, and probable redesign which is anticipated to take more than two to three years to accomplish all of these standards changes. And once these changes are completed, UL has indicated that it could take several years for local officials to update various building codes. Following standards updates, machines would need to be produced in limited numbers, tested, and sent to UL/CSA for certification.

NAMA and the vending machine manufacturing industry are proud of the efficiency gains they have made over the last few years. Our members are proud to be ENERGY STAR partners. Many of the industries customers require and purchase only ENERGY STAR certified products and industry manufacturers want to provide them these products. However, we believe it impossible for a standard setting process to proceed without having a comprehensive view of the facts before us. We encourage EPA to delay the current ENERGY STAR process until at least 2022 when we expect to have a clearer picture of the energy requirements needed to safely transition away from R-134a to propane.

The convenience services industry is comprised of a majority of small businesses. Moving forward on this specification, without a comprehensive review of the overall situation would have a negative impact on many small businesses across the country by impeding the ability to purchase machines to place in government buildings, universities and other public buildings that require ENERGY STAR compliant equipment.

Thank you very much for the opportunity to share our thoughts and we would welcome any questions on the topic.

Kind regards,

Jason Eberstein
Director, State & Federal Government Affairs