



255 West Burr Blvd., Kearneysville, WV 25430
304.725.6921 (phone) 304.725.6983 (fax)

October 9, 2018

To: ENERGY STAR Specification Development Group

Subject: Comments on Draft 1 of Proposed Energy Star Version 4.0
Product Specification For Refrigerated Beverage Vending Machines

Dear Sir or Madam:

Automated Merchandising Systems (“AMS”) is a supporter of the concepts embraced in this program and we agree that its presence has provided some benefit to vending operators and particularly their customers.

We have successfully adapted our high efficiency product line to comply with the current Energy Star 3.1 requirements. We also maintain the separate and mandated requirements of the U.S. Department of Energy, the California Energy Commission and Natural Resources Canada. We feel strongly that more harmonization between these various agencies should be a prime concern for everyone involved and applaud your efforts toward that goal and urge you to continue to give this aspect of the rule-making process your serious consideration.

Specific Comments to Subject Proposal:

1. Definitions:

c: ‘Food’ should explicitly reference “potentially hazardous food” in order to differentiate this new category from the simpler “beverage” category. (‘Beverages’ are food, but most do not become hazardous when the temperature is uncontrolled.)

General: Since our product line includes the ability to vend potentially hazardous food (as well as “beverages”) we’ve always had to consider and provide for this in our previous EnergyStar submissions. The key factors to our ability to do this while meeting the latest DOE energy limits which will become effective January 8, 2019 are:

- i) The ability to operate at our minimum application temperature as recently allowed in the EERE–2013–BT–TP–0045 Rules which went into effect in 2015, and
- ii) The EnergyStar 3.1 (and earlier) allowance that the machine must incorporate *either* a Low Power Mode *or* a Low Power Refrigeration Mode. We cannot allow for a Low Power Refrigeration Mode if potentially hazardous food is being vended.

I am unaware of a Rule (DOE or other) regarding energy consumption of vending machines for frozen foods. This would require a lot of effort to consider and then formulate rules on their energy use.

I am confused by the phrase “chilled (i.e., salads, sandwiches) packaged items” in your request for comments. The definition of “chilled” does not appear in any of the DOE or previous EPA documents, but our Industry treats the items you’ve listed as potentially hazardous foods and they should therefore be “refrigerated” and maintained under strict Health and Safety Controls as specified under the NAMA “Standard for the Sanitary Design and Construction of Food and Beverage Vending Machines” or NSF/ANSI 25 “Vending Machines for Food and Beverages”.

2) Scope:

General comments are as stated earlier: Since the broad category of “beverages” includes potentially hazardous food (milk is an example) we’ve always had to include these in the regulated group per the DOE requirements for refrigerated beverage vending machines.

Prior to the DOE Test Procedure change in 2015 as identified above, we had to install special software in order to achieve the 36°F average product temperature required. Our machines have a default minimum temperature setpoint of 40°F as this is more appropriate than 36°F for food storage. We see no need to specify different test loads – the 12 oz. cans are a good representation of a load of “food”.

If the load is under Health and Safety Controls, the low power refrigeration mode is inhibited by our firmware controls. If the machine is not loaded with potentially hazardous food, this control can be disabled by the operator and the low power refrigeration mode can be activated as desired.

3) Certification Criteria:

a) MDEC

The equations proposed are demanding a very aggressive MDEC that is 10% below DOE’s 2019 mandated values. I do not think these are reasonable or that it is likely that our equipment will be able to achieve them without massive

redesigns and added costs. Foremost in this is the present ongoing effort to select and design to a refrigerant allowed under EPA's SNAP Rule 20.

In the Notes beginning at Line 142 of the draft, you state that the 2019 DOE Class A MDEC "aligns with the performance criteria for Version 3.1 ENERGY STAR. However, because the DOE Test Procedure changed in 2015 (a change that effectively reduced our machine's MDEC by 0.2KWH/day to account for monetary systems) the 2019 DOE MDEC is actually about 5% below that of EnergyStar 3.1 levels. In other words if a typical Class A machine met DOE's 2012 MDEC limit of X, then ES3.1 required us to be at 95% of X. Then the 2015 DOE test procedure change mentioned earlier required us to be at 95% of X with the ES rating unchanged (DOE = ES3.1 at this point). The 2019 DOE MDEC requires us to be at 90% of 95% of X or 85.5% of X. What you are proposing would limit us to 90% of this value or 77% of X. So, you are asking us to better the 2102 DOE requirements by some 23%!

In order to meet the 2012 DOE MDEC limits, we had to use – and have used since then - LED lighting, an expensive high efficiency compressor, electronically-controlled fan motors (both condenser and evaporator) and improved insulation. We have very few options left in order to meet the 2019 DOE limits and it will be even more difficult to meet these proposed ES 4.0 limits.

As a current foamed insulation customer of Dow Chemical, they explained to us that the Vending Times article you cite does not apply to us. That report was based on them bringing a very old and dated system at a manufacturer's site up to a level more consistent with the system we've used here for some 20 years! There was no magical 10% breakthrough in chemistry. I wish this "breakthrough" were true, but it is not.

With the present uncertainty we face with the SNAP program it becomes even more obvious the difficulties we face. While in the request for comments you suggest that we can "leverage existing technologies, design options and components" to achieve these levels I would argue that we've done almost everything we can to meet the present levels.

Regarding alternative refrigerants, Propane is the only potentially viable refrigerant listed in the SNAP 20 Rule. CO₂ was a fringe possibility but was very doubtful due to its efficiency, but it is no longer a possibility because there is no longer a compressor available in the capacity range needed for these applications. The problem we face with propane is that UL Listing of our machines is dependent on a notation in the Installation Instructions that machines housing this gas must include a warning that: This machine is not intended for use in lobbies or locations of egress, such as a hallway or public corridor". This is a severe restriction on the normal use of vending machines and will be an extreme roadblock to Sales of such machines.

In summary, the alternative refrigerants allowed under SNAP 20 will not help us in any way – the best we can hope for if/when we must change is that the alternates won't hurt us.

b) Low Power Mode

- i. Refrigeration Low Power Mode: This should be a credit as you've proposed. However, since our machines can be switched from and to "food" machines (that safely store and dispense potentially hazardous foods) through a simple firmware change, we won't be able to benefit from it.
- ii. Accessory Low Power Mode: This is fine except that I do not understand why the availability of this feature isn't afforded a 3% credit as is the given the Refrigeration Low Power Mode. It does save energy!
- iii. AMS includes extensive Documentation to Operators on the use of it's EnergySensit[®] operating modes.

4) Test Requirements

A) Sampling Plan

I have no comment on the use of either plan except to say that testing two units at a third party test lab will be an extra expense that AMS would probably not make use of.

B) Test Procedure

AMS agrees that it is preferable to use the DOE test procedure.

C) Represented Value

I am puzzled by the requirement that this value should be the same as that provided to DOE. With the significant energy reductions you are proposing I think it very likely that there will be different or additional components needed in order to meet them. This, in turn, could easily lead to significant additional cost and manufacturers might want to offer a separate EnergyStar rated machine and pass that additional cost on to the operator. If the EnergyStar version then had to list a DEC that is equal to that listed for DOE it would seem likely to cause a lot of confusion.

D) Significant Digits and Rounding

I have no issue with this.

5) Effective Date

Due to the strict MDEC limits proposed here, and due to the continuing uncertainty of the SNAP 20 Rules, I think an effective date only 9 months after the Rule is Issued is far too short. Due to the SNAP 20 situation, some manufacturers may have "guessed right" and this will be simple for them while others may make an unfortunate decision which will make compliance very

difficult. This could easily lead to a “winners and losers” situation which would be very unfortunate for the Industry and for our customers.

AMS suggests a full 24-month period between the release and the effective date.

6) Future Specification Revisions

We understand that certification is not automatically granted for the life of a product model, but the language here leads me to ask for clarification. If we make changes to a Model in order to meet the newest requirements, but do not want to confuse our customers with different Model Numbers, is it allowable to get the changes certified under the existing Model Number? If so, Model xx built up to 1 day before the Effective Date could be Labelled and the same Model Number built on or after the Effective Date could also be Labelled provided that it included the design changes and indeed met the new requirements?

Thank you for your consideration,

Jim Collins
Director of Engineering
Automated Merchandising Systems, Inc.
255 W. Burr Blvd.
Kearneysville, WV 25430