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Cc: [Spitz, Adam](#); [Melara, Jasmin](#); [Charles Hon](#)
Subject: Energy Star 5.0 Proposal - Comments from True Manufacturing Company, Inc.
Date: Friday, February 26, 2021 4:35:52 PM

Good afternoon Tanja and Stephanie,

Please consider these comments below to be our official comments with respect to the published Energy Star 5.0 proposal.

True Manufacturing Company, Inc. is one of the largest manufacturers of commercial self-contained refrigeration equipment in North America. True pioneered and introduced R-290 (propane) applications in the US and Canada for self-contained commercial refrigeration. While also having an impact on the world market for self-contained commercial refrigeration, True cannot quantify that impact.

True, by converting our entire production away from HFC synthetic refrigerants to HC natural refrigerants, has not only reduced the energy consumption of all our equipment, but has also virtually eliminated our GWP foot-print due to leaked refrigerants.

Currently, the Energy Star 4.0 webpage shows a total of 1292 models listed. Of this total, 1089 use propane (R-290). Adding R-600a to the R-290 total, 1222 (95%) of the units listed with Energy Star use hydrocarbons instead of synthetic refrigerants. In 2014, all Energy Star models used R-134a or R-404a.

Keeping the comments noted above in mind, there is opportunity for discussion and consideration with respect to the Energy Star 5.0 proposal, as outlined below:

1. **RC Remote Condensing Unit Refrigeration** – there are two significant environmental concerns with remote refrigeration in comparison to the self-contained category. First, there is no real or actual energy (electrical) consumption data for Remote Condensing unit systems available for review. A theoretical energy consumption number is assigned to a remote cabinet based on the refrigerant mass flow rate and EER look up tables. This does not take into the account compressor efficiencies, fan motor efficiencies or refrigerant gas (fluid) efficiencies. The second environmental concern is the refrigerant leak rate from the RC refrigeration systems, as well documented in many industry studies. The EPA Green Chill program was introduced to encourage the mitigation of refrigerant leaks. Even at a Platinum level, however, refrigerant leaks are “permitted”. Since 99% of all remote system utilize synthetic refrigerants with GWPs greater than 500 (i.e., R-32 at 675, R-410A at 2088, R-404A at 3922, etc.) these leak rates are, from a purely environmental perspective, in direct contradiction to refrigerant loss and greenhouse gas mitigation goals.
 - Without any real (measured) energy consumption data for remote condensing unit, lumping them into one category with self-contained refrigeration is simply inequitable. When testing self-contained units, reporting requires ALL energy being consumed – not only the energy consumed by the refrigerated storage space (cabinet).
 - Energy consumption based on refrigerant mass-flow rate is biased in that it does not take into account the environmental conditions to which the condensing unit is subjected. For example: operating on a 120 degrees F day, on a hot tar roof during the summer, does not improve the energy efficiency of any condensing unit. This is an idealized value that does not exist.

- How will “hybrid” systems be reported? These are RC units where the condensing units are installed inside a building location (not on a roof).
 - The very high GWP synthetic refrigerants used in RC systems, as documented, will leak, causing serious environmental damage. To apply the very well-respected Energy Star mark to remote refrigeration systems does not make sense if refrigerant leaks are inevitable.
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 - If RC units are to be considered by Energy Star, entire system, real energy consumption numbers must be required. The refrigerant leak rate limitations must be clearly defined and should be near zero. The refrigerant GWP limitations established at the 150 GWP maximum level.
2. **SOC** – the RC units have the same concerns as noted above. For SC units, shouldn't the same standards apply as those applied to VCT.SC.M units? The refrigeration system operation is the same. The function and application are different from the VCT units, which should be given consideration.
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3. **Refrigerated Preparation and Buffet Table** – the energy testing procedure specified by the CEC is questionable and warrants serious discussion. It uses the NSF Standard 7 2016 as a starting point. F2143-16 converts the 4-hour NSF 7 test into a 24-hour test, which includes door opening, as well as the opening and closing of lids. These model types (designs) are not meant to store food over a 24-hour period. The general purpose of these units is to keep fresh ingredients cold during the “rush” periods of a food service operation – breakfast, lunch and dinner – they are not meant to be storage units in between or after these busy periods. It is True’s experience that it is common to unplug units at night since these cabinets must be thoroughly cleaned at the end of each workday. If an energy number is to be considered for these models, to measure and compare, then please consider simply utilizing the existing NSF 7 Test procedure. **As the NSF 7 test is performed over the 4-hour test period, simply measure the energy during this time too.** While NSF 7 is voluntary, all manufacturers selling this type of equipment claim to be certified to this standard. Measuring the energy consumption during the NSF 7 testing ensures that the temperature (food safety) requirements are also being met. An energy measurement without the temperature performance is irrelevant.

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Please contact me at your convenience if you have any further questions.

Best Regards,

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