

November 11, 2009

Ms. Christina Chang
ICF International
1725 Eye St., NW
Suite 1000
Washington, DC 20006

Re: Mitsubishi Electric & Electronics USA, Inc.'s Comments on U.S. EPA
ENERGY STAR Final Draft Light Commercial HVAC Specifications Version 2.0

Dear Ms. Chang;

Mitsubishi Electric & Electronics USA, Inc. (MEUS) appreciates the opportunity to submit the following comments in response to the U.S. Environmental Protection Agency's (EPA) request for feedback on the Final Draft Version 2.0 of the ENERGY STAR[®] Light Commercial HVAC Specification Version 2.0. We commend EPA for proposing the inclusion of highly efficient variable refrigerant flow (VRF) multi-split systems in the Version 2.0 specification.

MEUS's key comments are summarized as follows:

- D. Variable Refrigerant Flow (VRF) Multi-Split Systems: A split system air-conditioner or heat pump incorporating a single refrigerant circuit, with one or more outdoor units, at least one variable speed compressor or an alternative compressor combination for varying the capacity of the system by three or more steps, multiple indoor fan coil units, each of which is individually metered and individually controlled by a proprietary control device and common communications network. The system shall be capable of operating either as an air conditioner or a heat pump.

MEUS proposes changing the last sentence to "The system shall be capable of operating as either as an air conditioner, a heat pump or a heat pump with heat recovery."

Heating Section Type: Based on industry comments on Draft 2, EPA proposes to separate central air conditioners rated at 65,000 Btu/h and under 240,000 Btu/h into heating section type categories (i.e. "electric resistance (or none)" and "all other") and establish different sets of EER and IEER values for each. Industry sources cite decreased efficiency due to pressure drops from increased fan power consumption caused by gas heating. Therefore, proposed EER and IEER values for "all other" (i.e. gas heat) heating section type equipment are proposed to be 0.2 lower than the EER and IEER values for electric resistance type equipment. The 0.2 EER/IEER deduction is consistent with the U.S. Department of Energy (DOE) and ASHRAE standards for gas equipment.

For Tier two consideration MEUS proposes a similar deduction of 0.2 EER for VRF heat pumps that also perform heat recovery functions due to the additional pressure drop and small electrical usage.

For air-source heat pumps, EPA has decided not to define performance levels for units greater than 65,000 Btu/h classified as “all other” (i.e. gas heat) because commercial products with this technology are not currently available in the marketplace. If this product type becomes available in the future, EPA will consider its inclusion in the specification. Performance levels proposed for air-source heat pumps greater than 65,000 Btu/h are applicable to electric resistance heat type equipment only.

Note Continued:

Cost-Effectiveness: Based on limited pricing data provided by industry sources, EPA has conducted a preliminary cost-effectiveness analysis of high efficiency CAC/ASHP equipment under 240,000 Btu/h and has determined that equipment that meet EPA’s proposed Version 2.0 energy efficiency levels provide a pay-back to the consumer within five years. Stakeholders are encouraged to share pricing or incremental cost data to assist EPA in completing a more comprehensive cost-effective analysis for these products.

VRF Multi-Split Equipment: AHRI recently approved AHRI Standard 1230 for VRF multi-split systems, which covers VRF equipment rated up to 300,000 Btu/h. EPA references this standard in Tables 1 and 2 as the appropriate test procedure for VRF equipment. EPA proposes that VRF equipment meet the air conditioner or heat pump performance levels in this Version 2.0 specification, as appropriate. Once the AHRI certification program for VRF equipment is in place in early 2010 and robust performance data become available, EPA plans to conduct a review and determine if Tier 1 performance levels are appropriate for this equipment type.

MEUS urges EPA to include VRF products as part of the light commercial program and not as a separate product class. VRF products represent about 5% of the unitary light commercial market above 65,000 Btu/H. Also, some VRF products may be considered for the “best in class” category that has been proposed and should be treated as part of the whole light commercial program rather than being confined to a VRF only category.

- 4) **Test Procedure:** The manufacturer shall perform energy-efficiency tests, or have tests performed by third party testing labs, as necessary, to determine which products comply. Based on the results of these tests, the manufacturer **shall certify** those products that meet the specification outlined above. Light commercial air conditioners and heat pumps shall qualify under rating conditions in accordance with AHRI 210/240 (formerly ARI 210/240), AHRI 340/360 (formerly ARI 340/360) or AHRI 1230, as appropriate. The test procedure for each equipment type and size category is provided in Tables 1 and 2 of Section 3, above.

The wording in this section may lead to confusion. Manufacturers all self-certify to AHRI that their products meet the efficiency requirements and have their products listed in the AHRI directory. Will there be a specific requirement to “certify” to EPA in addition to

having products listed at AHRI? If so, could a manufacturer certify to EPA without having products listed at AHRI?

- 6) Future Specification Revisions: EPA reserves the right to change the specification should technological and/or market changes affect its usefulness to consumers, industry, or the environment. In keeping with current policy, revisions to the specification are arrived at through industry discussions. In the event of a specification revision, please note that ENERGY STAR qualification is not automatically granted for the life of a product model. To carry the ENERGY STAR mark, a product model must meet the ENERGY STAR specification in effect on the model's date of manufacture.

Variable Refrigerant Flow (VRF) Multi-Split Equipment: Once the AHRI certification program for VRF equipment has been implemented in early 2010 and robust performance data become available, EPA plans to conduct a review to determine if Tier 1 performance levels are appropriate for VRF equipment.

MEUS recommends a meeting in October 2010 with several VRF manufacturers and EPA to discuss the latest performance data that is available and Tier 1 performance levels.

We appreciate EPA consideration of our comments on the Final Draft Version 2.0 of the ENERGY STAR Light Commercial HVAC specifications. Please contact me with any questions.

Sincerely,



Paul Doppel
Director
Factory Liaison and Government Affairs
HVAC Advanced Products Division
Mitsubishi Electric & Electronics USA, Inc.
3400 Lawrenceville-Suwanee Road
Suwanee, GA 30024

CC: Steven Ryan, EPA
Peter Salavantis, MEUS