MITSUBISHI ELECTRIC US, INC.
Heating and Air Conditioning Division
1340 Satellite Boulevard
Suwanee, GA 30024

November 19, 2020

Ms. Abigail Daken
Manager, ENERGY STAR HVAC Program
United States Environmental Protection Agency
Washington, DC 20460
(Sent via email to CAC-ASHP@energystar.gov)

Re: Mitsubishi Electric US Comments on ENERGY STAR® Final Draft Version 6.0 Central Air Conditioner and Heat Pump (CAC/HP) Specification

Dear Ms. Daken,

Mitsubishi Electric US, Inc. (MEUS), a leading provider of ductless and Variable Refrigerant Flow (VRF) heat pumps and air conditioning systems, is submitting these comments in response to the United States Environmental Protection Agency (EPA) ENERGY STAR® Final Draft Version 6.0 Central Air Conditioner and Heat Pump (CAC/ASHP) Specification, issued on October 22, 2020.

1. Energy Star adopted the following NEEP specification metric: **COP @5°F >1.75 (at maximum capacity operation).** It is critical that it is defined in ENERGY STAR® as "at max capacity."

   From the Controls Verification Procedure document: If we don't define whether the COP and Capacity are measured at minimum, rated or maximum compressor speed, then we leave it up to the reader to make that determination. There should be absolutely no doubt at what compressor speed these specifications are being measured.

85 **Validation Criteria:**
86 COP and Percentage Heating Capacity @ 5°F obtained as described in this procedure must be equal or
87 greater than the criteria below to earn the ENERGY STAR Cold Climate Heat Pump designation:
88 (Table 4A in Certification Criteria section of the ENERGY STAR specifications)

COP @ 5°F	Percentage of Heating Capacity @ 5°F
1.75	70%

   There are two heating capacities at 5°F, Minimum and Maximum. There are 3 heating capacities at 47°F, Minimum, Rated, and Maximum. This doesn't specify which one should be used at each temperature.

51 L. Percentage of Heating Capacity @ 5°F: The heating capacity of a given unit at 5°F, divided by the
52 heating capacity at 47°F, expressed as a percentage.

   Because compressor speed is not specified, it could cause confusion and minimize the potential for heat pumps to provide 100% heating capacity at 5˚F. If capacity at 5˚F is measured at the same compressor speed as at 47˚F, products will not perform at 100% capacity as designed.

Our proposed revision to Table 4A:

COP @ Max Capacity 5˚F	Percentage of Heating Capacity @ 5˚F (Max Capacity 5˚F/Rated Capacity 47˚F)
1.75	70%

2. Communicating Equipment: There are only a small number of such products that currently comply with the proposed criteria, all at the upper levels of the market. Including such requirements in the base CAC/ASHP criteria will increase consumer cost and likely decrease qualifying ENERGY STAR® product numbers.

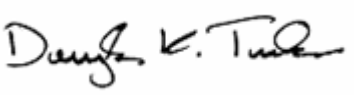
3. Demand Response: While we are not opposed to the inclusion of demand response criteria, this should also be part of a "Most Efficient" program, at least in initial years.

4. Two corrections to the connected criteria are needed to fully harmonize with AHRI Standard 1380. First, the reporting of Operational States was removed from the OpenADR requirements. The definitions for the Operational States exist in Section 6.1.2.2; however, no reports are required to be made in OpenADR. Second, the Final Draft requires the transmission of measured or estimated instantaneous power draw in current conditions; however, the reporting of power draw was removed from the final, published edition of AHRI 1380. MEUS supports full harmonization with AHRI Standard 1380 and asks that EPA update the Final Draft Specifications to remove operational state and power draw reporting. Further, connected criteria requirements should be included in an Energy Star "Most Efficient", or similar, category which goes beyond performance metrics, and not in the base CAC/HP program.

5. The certification of *all* ENERGY STAR® products to Department of Energy M1 metrics beginning January 1, 2022 will unfairly penalize certain currently-qualified high efficiency products that may be manufactured only until December 31, 2022, with production ceasing due to product line changes. These products would not be rated to the M1 test procedure. If the transition to Version 6.0 proceeds as proposed, these products would be unavailable to consumers despite being high efficiency. Therefore, MEUS urges EPA to change and adopt the effective date for mandatory change from Appendix M (SEER/EER/HSPF) to M1 (SEER2/EER2/HSPF2) to January 1, 2023.

MEUS appreciates the opportunity to provide these comments. If you have any questions regarding our comments or need additional information, please contact me.

Sincerely,



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