[6450-01-P]

DEPARTMENT OF ENERGY

[Case Number 2019-004; EERE-2019-BT-WAV-0009]

Notice of Petition for Waiver of GD Midea Air Conditioning Equipment Co. LTD. from the Department of Energy Room Air Conditioner Test Procedure and Notice of Grant of Interim Waiver

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy.

ACTION: Notice of petition for waiver and grant of an interim waiver, and request for comments.

SUMMARY: This document announces receipt of and publishes a petition for waiver from GD Midea Air Conditioning Equipment Co. LTD. ("Midea"), which seeks an exemption from the U.S. Department of Energy ("DOE") test procedure when determining the efficiency of listed room air conditioner basic models. Midea seeks to use an alternate test procedure to address issues involved in testing the basic models listed in its petition. According to Midea, the current DOE test procedure for room air conditioners, which provides for testing at full-load performance only, does not take into account the benefits of room air conditioners that use variable-speed compressors ("variable-speed room air conditioners"), with their part-load performance characteristics, and misrepresents their actual energy consumption. Midea requests that DOE permit Midea to test the basic models listed in its petition using the alternate test procedure in the interim waiver granted to LG Electronics USA, Inc. ("LG") on June 29, 2018, which requires testing units at four rating conditions instead of a single rating condition and calculating each test unit's weighted-average combined energy efficiency ratio ("CEER"), which

is compared to the expected performance of a theoretical comparable single-speed room air conditioner across the same four rating conditions. The measured performance of the variable-speed room air conditioner when tested under the high-temperature rating condition of the DOE test procedure for room air conditioners would be scaled by the same relative performance improvement to determine the test unit's final rated CEER value. DOE grants Midea an interim waiver from DOE's room air conditioner test procedure for the basic models listed in the Interim Waiver Order, subject to use of the alternate test procedure as set forth in the Interim Waiver Order. DOE solicits comments, data, and information concerning Midea's petition and its suggested alternate test procedure to inform its final decision on Midea's waiver request.

DATES: Written comments and information will be accepted on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

ADDRESSES: Interested persons are encouraged to submit comments using the Federal eRulemaking Portal at *http://www.regulations.gov*. Alternatively, interested persons may submit comments, identified by case number "2019-004", and Docket number "EERE-2019-BT-WAV-0009," by any of the following methods:

- *Federal eRulemaking Portal*: *http://www.regulations.gov*. Follow the instructions for submitting comments.
- *E-mail*: MideaAmerica2019WAV0009@ee.doe.gov Include the case number [Case No. 2019-004] in the subject line of the message.
- *Postal Mail*: Appliance and Equipment Standards Program, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Office, Mailstop EE-5B, Petition for Waiver Case No. 2019-004, 1000 Independence Avenue,

SW., Washington, DC 20585-0121. If possible, please submit all items on a compact disc ("CD"), in which case it is not necessary to include printed copies.

- *Hand Delivery/Courier*: Appliance and Equipment Standards Program, U.S. Department of Energy, Building Technologies Office, 950 L'Enfant Plaza, SW., 6th Floor, Washington, DC, 20024. If possible, please submit all items on a "CD", in which case it is not necessary to include printed copies.

No telefacsimilies (faxes) will be accepted. For detailed instructions on submitting comments and additional information on this process, see section V of this document.

Docket: The docket, which includes *Federal Register* notices, comments, and other supporting documents/materials, is available for review at *http://www.regulations.gov*. All documents in the docket are listed in the *http://www.regulations*.gov index. However, some documents listed in the index, such as those containing information that is exempt from public disclosure, may not be publicly available.

The docket web page can be found at *http://www.regulations.gov/docket?D=EERE-2019-BT-WAV-0009*. The docket web page contains simple instruction on how to access all documents, including public comments, in the docket. See section V for information on how to submit comments through *http://www.regulations.gov*.

FOR FURTHER INFORMATION CONTACT:

Ms. Lucy deButts, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Office, Mailstop EE-5B, 1000 Independence Avenue, SW., Washington, DC 20585-0121. E-mail: *AS_Waiver_Request@ee.doe.gov*.

Ms. Sarah Butler, U.S. Department of Energy, Office of the General Counsel, Mail Stop GC-33, Forrestal Building, 1000 Independence Avenue, SW., Washington, DC 20585-0103. Telephone: (202) 586-1777. E-mail: *Sarah.Butler@hq.doe.gov*.

SUPPLEMENTARY INFORMATION:

I. Background and Authority

The Energy Policy and Conservation Act ("EPCA" or "the Act"),[1] Public Law 94-163 (42 U.S.C. 6291–6317, as codified), authorizes DOE to regulate the energy efficiency of certain consumer products and industrial equipment. Title III, Part B[2] of EPCA established the Energy Conservation Program for Consumer Products Other Than Automobiles, a program that includes room air conditioners, which are the focus of this document. (42 U.S.C. 6292(a)(2))

DOE regulations set forth at 10 CFR 430.27 contain provisions that allow any interested person to seek a waiver from test procedure requirements for a particular basic model when the petitioner's basic model for which the petition for waiver was submitted contains one or more design characteristics that either (1) prevent testing according to the prescribed test procedure, or (2) cause the prescribed test procedure to evaluate the basic model in a manner so unrepresentative of its true energy consumption characteristics as to provide materially inaccurate comparative data. 10 CFR 430.27(f)(2). A petitioner must include in its petition any alternate test procedures known to the petitioner to evaluate the basic model in a manner representative of its energy consumption characteristics. 10 CFR 430.27(b)(1)(iii).

[1] All references to EPCA in this document refer to the statute as amended through America's Water Infrastructure Act of 2018, Public Law 115-270 (October 23, 2018).
[2] For editorial reasons, upon codification in the U.S. Code, Part B was redesignated as Part A.

DOE may grant the waiver subject to conditions, including adherence to alternate test procedures. 10 CFR 430.27(f)(2). As soon as practicable after the granting of any waiver, DOE will publish in the *Federal Register* a notice of proposed rulemaking to amend its regulations so as to eliminate any need for the continuation of such waiver. 10 CFR 430.27(l). As soon thereafter as practicable, DOE will publish in the *Federal Register* a final rule. *Id*.

The waiver process also provides that DOE may grant an interim waiver if it appears likely that DOE will grant the underlying petition for waiver and/or if DOE determines that it would be desirable for public policy reasons to grant immediate relief pending a determination on the underlying petition for waiver. 10 CFR 430.27(e)(2). Within one year of issuance of an interim waiver, DOE will either: (i) publish in the *Federal Register* a determination on the petition for waiver; or (ii) publish in the *Federal Register* a new or amended test procedure that addresses the issues presented in the waiver. 10 CFR 430.27(h)(1). When DOE amends the test procedure to address the issues presented in a waiver, the waiver will automatically terminate on the date on which use of that test procedure is required to demonstrate compliance. 10 CFR 430.27(h)(2).

II. Midea's Petition for Waiver and Petition for Interim Waiver

On March 25, 2019, Midea filed a petition for waiver and a petition for interim waiver from the test procedure applicable to room air conditioners set forth in appendix F.[3] According to Midea, the current DOE test procedure for room air conditioners, which provides for testing at full-load performance only (*i.e.*, at a single indoor and high-temperature outdoor operating condition), does not take into account the benefits of variable-speed room air conditioners, with

[3] Midea's petition for a waiver and petition for an interim waiver is provided in the docket located at: *https://www.regulations.gov/document?D=EERE-2019-BT-WAV-0009-0001*.

their part-load performance characteristics, and misrepresents their actual energy consumption.[4] Appendix F requires testing room air conditioners only with full-load performance, in part, as a result of DOE having previously concluded that widespread use of part-load technology in room air conditioners was not likely to be stimulated by the development of a part-load metric. 76 FR 972, 1016 (January 6, 2011).

Midea states that, to operate in the most efficient possible manner, variable-speed room air conditioners adjust the compressor rotation speed based upon demand to maintain the desired temperature in the home without turning the compressor and blower motor(s) on and off. Midea claims that, compared to room air conditioners without variable-speed compressors, this ability to adjust to conditions results in both significant energy savings and faster cooling. Midea asserts that because the DOE test procedure does not account for part-load characteristics, the results of the test procedure are not representative of the benefits of variable-speed room air conditioners.

Midea asserts that the suggested approach is consistent with an interim waiver issued to LG Electronics USA, Inc. ("LG") on June 29, 2018. 83 FR 30717.

Midea also requests an interim waiver from the existing DOE test procedure. DOE will grant an interim waiver if it appears likely that the petition for waiver will be granted, and/or if DOE determines that it would be desirable for public policy reasons to grant immediate relief pending a determination of the petition for waiver. See 10 CFR 430.27(e)(2).

[4] The specific basic models for which the petition applies are room air conditioner basic models Midea MAW08V1DWT, Midea MAW08V1QWT, Midea MAW10V1DWT, Midea MAW10V1QWT, Midea MAW12V1DWT, and Midea MAW12V1QWT. These basic model names were provided by Midea in its March 25, 2019 petition.

DOE understands that, absent an interim waiver, the test procedure does not accurately measure the energy consumption of variable-speed room air conditioners, and without waiver relief, the part-load characteristics of the basic models identified in Midea's petition would not be captured.

III. Requested Alternate Test Procedure

EPCA requires that manufacturers use DOE test procedures when making representations about the energy efficiency or energy consumption and corresponding costs of products covered by the statute. (42 U.S.C. 6293(c)) Consistent representations are important for manufacturers to use in making representations about the energy efficiency of their products and to demonstrate compliance with applicable DOE energy conservation standards. Pursuant to its regulations applicable to waivers and interim waivers from applicable test procedures at 10 CFR 430.27, and after consideration of public comments on the petition, DOE in a subsequent Decision and Order will consider setting an alternate test procedure for the basic models listed by Midea .

Midea requests testing the basic models listed in its petition according to the test procedure for variable-speed room air conditioners prescribed by DOE in an interim waiver granted to LG. That waiver required testing variable-speed room air conditioners according to the test procedure in appendix F, except instead of a single rating condition, testing of a variable-speed room air conditioner occurred at four rating conditions. 83 FR 30717 ("LG Interim Waiver"). DOE later issued a Decision and Order to LG that supersedes the interim waiver. The four test conditions Midea suggested, identical to those in the LG Decision and Order, are presented in Table III.1.

Table III.1: Indoor and Outdoor Inlet Air Test Conditions – Variable-Speed Room Air Conditioners

Test Condition	Evaporator Inlet (Indoor) Air, °*F*		Condenser Inlet (Outdoor) Air, °*F*		Compressor Speed
	Dry Bulb	Wet Bulb	Dry Bulb	Wet Bulb	
Test Condition 1	80	67	95	75	Full
Test Condition 2	80	67	92	72.5	Full
Test Condition 3	80	67	87	69	Intermediate
Test Condition 4	80	67	82	65	Low

Under the suggested test procedure, the test unit's weighted-average combined energy efficiency ratio (CEER) metric is calculated from the individual CEER values obtained at the four rating conditions. DOE based the room air conditioner weighting factors for each rating temperature on the fractional temperature bin hours provided in Table 19 of DOE's test procedure for central air conditioners (10 CFR part 430, subpart B, appendix M ("appendix M")). This weighted-average value is adjusted to normalize it against the expected weighted-average CEER under the same four rating conditions of a theoretical comparable single-speed room air conditioner. This theoretical air conditioner is one that at the 95 degree Fahrenheit (°F) test condition performs the same as the variable-speed test unit, but with differing performance at the other rating conditions. The differing performance is due to optimization of the refrigeration system efficiency through compressor speed adjustments to eliminate cycling losses and better match the cooling load. To determine the test unit's final rated CEER value, Midea would multiply a performance adjustment factor and the measured performance of the variable-speed room air conditioner when tested at the 95 °F rating condition according to appendix F. The factor reflects the average performance improvement due to the variable-speed compressor

across multiple rating conditions. Midea states that this approach takes into account performance and efficiency improvements associated with variable-speed room air conditioners as compared to room air conditions with single-speed compressors and isolates the effects just attributable to the variable speed operation.

IV. Grant of an Interim Waiver

DOE has reviewed Midea's petition for an interim waiver and the alternate test procedure requested by Midea. These materials that DOE reviewed support Midea's assertion of the part-load characteristics of the listed basic models and that the DOE test procedure may evaluate the basic models in a manner unrepresentative of their true energy consumption characteristics. In particular, the DOE test procedure does not capture the relative efficiency improvements that can be achieved by variable-speed room air conditioners over a range of operating conditions compared to single-speed room air conditioners. In the absence of an alternate test procedure, the CEER values of variable-speed room air conditioners would suggest they consume at least as much energy annually as a comparable single-speed room air conditioner, despite the anticipated benefits of improved performance under part-load conditions. Furthermore, DOE has reviewed the alternate procedure suggested by Midea, along with the additional performance modeling and analysis performed by DOE conducted in evaluation of the LG Interim Waiver.[5] Based on this review it appears that the suggested alternate test procedure, with the changes described below, will allow for a more accurate measurement of efficiency of the listed basic models of variable-speed room air conditioners, while alleviating the testing problems associated with Midea's testing those basic models.

[5] The modeling and analysis conducted in evaluation of the LG Interim Waiver is available at: *https://www.regulations.gov/docket?D=EERE-2018-BT-WAV-0006.*

DOE incorporated the following changes into the suggested alternate test procedure, based on further review undertaken for the alternate test procedure in the waiver DOE granted to LG in a Decision and Order published in the *Federal Register* on May 8, 2019. 82 FR 20111 ("LG Decision and Order"). First, DOE is providing compressor speed definitions to harmonize the alternate test procedure with industry standards. Second, because fixed compressor speeds are critical to the repeatability of the alternate test procedure, Midea provided DOE all necessary instructions to maintain the compressor speeds required for each test condition (Docket No. EERE-2019-BT-WAV-0009-0003). This includes the compressor frequency set points at each test condition, instructions necessary to maintain the compressor speeds required for each test condition, and the control settings used for the variable components.[6] Third, DOE modified the annual energy consumption and corresponding cost calculations by specifying the correct method to incorporate electrical power input data in 10 CFR 430.23(f), to ensure EnergyGuide labels present consistent and appropriate information to consumers. Fourth, DOE adjusted the CEER calculations in appendix F for clarity. Fifth, as discussed in the LG Decision and Order, DOE is not providing the option provided in the LG Interim Waiver to test the specified variable-speed room air conditioners using the air-enthalpy method. There are two reasons for this. One is that, compared to the calorimeter method, the air-enthalpy method's measured results differ. The other is that there is heat transfer within and through the unit chassis that the calorimeter

[6] Pursuant to 10 CFR 1004.11, if the manufacturer submits information that it believes to be confidential and exempt by law from public disclosure, the manufacturer should submit via email, postal mail, or hand delivery two well-marked copies: One copy of the document marked "confidential" including all the information believed to be confidential, and one copy of the document marked "non-confidential" with the information believed to be confidential deleted. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

method captures but the air-enthalpy method does not. 84 FR 20111, 20117. Sixth, to ensure that the low and intermediate compressor speeds result in representative cooling capacity under reduced loads, the low compressor speed definition requires that the test unit's measured cooling capacity at the 82 °F rating condition be no less than 47 percent and no greater than 57 percent of the measured cooling capacity when operating at the full compressor speed at the 95 °F rating condition.[7]

DOE has found that the suggested alternate test procedure, with the discussed modifications, will produce more accurate final CEER values for the variable-speed room air conditioners under the DOE test procedure's existing rating condition. The more accurate results reflect the average performance improvement associated with variable-speed compressors relative to comparable single-speed room air conditioners at differing operating conditions (*i.e.*, optimization of the refrigeration system efficiency through compressor speed adjustments to

[7] Two aspects of the cooling load range are important: 1) the cooling load at 82°F should be no more than 57 percent of the full-load cooling capacity according to the Air-Conditioning, Heating, and Refrigeration Institute (AHRI) Standard 210/240-2017, "Performance Rating of Unitary Air-conditioning & Air-source Heat Pump Equipment," and 2) a 10-percent tolerance on the measured cooling capacity is necessary because some variable-speed room ACs adjust speed in discrete steps, so it may not be possible to achieve the 57-percent condition exactly. To provide for the 10-percent tolerance, DOE requires the 57-percent cooling load condition as the upper end of the range and allows down to a 47-percent cooling load. This ensures the cooling load never exceeds 57 percent. The compressor speed nomenclature and definition clarifications are derived from AHRI 210/240-2017 and adapted to be applicable to room ACs. Equation 11.60 in AHRI 210/240-2017 relates the building load to an AC's full-load cooling capacity and outdoor temperature, and assumes full-load operation at 98 °F outdoor temperature. To provide consistency with the full-load test condition for room ACs, DOE adjusted (*i.e.*, normalized) this equation to reflect full-load operation at 95 °F outdoor temperature. Using the adjusted equation suggests that the representative cooling load at the 82 °F rating condition would be 57 percent of the full-load cooling capacity for room air conditioners. DOE recognizes that variable-speed room ACs may use compressors that vary their speed in discrete steps and may not be able to operate at a speed that provides exactly 57 percent cooling capacity. Therefore, the defined cooling capacity associated with the low compressor speed is presented as a 10-percent range rather than a single value. 57 percent cooling load is the upper bound of the 10-percent range defining the cooling capacity associated with the lower compressor speed (*i.e.*, the range is defined as 47 to 57 percent). This ensures that the variable-speed room AC is capable of matching the representative cooling load (57 percent of the maximum) at the 82 °F rating condition, while providing the performance benefits associated with variable-speed operation. In contrast, if the 10-percent range were to be defined as, for example, 52 to 62 percent (with 57 percent as the midpoint), a variable-speed room AC could be tested at 60 percent, for example, without demonstrating the capability to maintain variable-speed performance down to 57 percent.

better match the cooling load and eliminate cycling losses). Consequently, it appears likely that DOE will grant Midea's petition for waiver. Furthermore, DOE has determined that it is desirable for public policy reasons to grant Midea immediate relief pending a determination of the petition for waiver.

For the reasons stated, DOE has granted an interim waiver to GD Midea Air Conditioning Equipment Co. LTD ("Midea") for the room air conditioner basic models listed in paragraph (1)(A) below. Therefore, DOE has issued an **Order** stating:

(1) Midea must test and rate the following room air conditioner basic models with the alternate test procedure set forth in paragraph (2):

Brand	**Basic Model**
Midea	MAW08V1DWT
Midea	MAW08V1QWT
Midea	MAW10V1DWT
Midea	MAW10V1QWT
Midea	MAW12V1DWT
Midea	MAW12V1QWT

(2) The alternate test procedure for the Midea basic models listed in paragraph (1) is the test procedure for room air conditioners prescribed by DOE at appendix F to subpart B of 10 CFR part 430 (Appendix F) and 10 CFR 430.23(f), except (i) determine the combined energy efficiency ratio ("CEER") as detailed below, and (ii) calculate the average annual energy consumption referenced in 10 CFR 430.23(f)(3) as detailed below. In addition, for each basic model listed in paragraph (1), maintain compressor speeds at each test condition and set control settings for the variable components, according to the instructions GD Midea Air Conditioning Equipment Co. LTD submitted to DOE (*https://www.regulations.gov/document?D=EERE-2019-*

BT-WAV-0009-0003). All other requirements of Appendix F and DOE's regulations remain applicable.

In 10 CFR 430.23, in paragraph (f) revise paragraph (3)(i) to read as follows:

The electrical power input in kilowatts as calculated in section 5.2.1 of appendix F to this subpart, and

In 10 CFR 430.23, in paragraph (f) revise paragraph (5) to read as follows:

(5) Calculate the combined energy efficiency ratio for room air conditioners, expressed in Btu's per watt-hour, as follows:

(i) Calculate the quotient of:

(A) The cooling capacity as determined at the 95 °F outdoor test condition, $Capacity_1$, in Btus per hour, as determined in accordance with section 5.1 of appendix F to this subpart multiplied by the representative average-use cycle of 750 hours of compressor operation per year, divided by

(B) The combined annual energy consumption, in watt hours, which is the sum of the annual energy consumption for cooling mode, calculated in section 5.4.2 of appendix F to this subpart for test condition 1 in Table 1 of appendix F to this subpart, and the standby mode and off mode energy consumption, as determined in accordance with section 5.3 of appendix F to this subpart. Multiply the sum of the annual energy consumption in cooling mode and standby mode and off mode energy consumption by a conversion factor of 1,000 to convert kilowatt-hours to watt-hours.

(ii) Multiply the quotient calculated in paragraph (f)(5)(i) of this section by (1 + Fp), where Fp is the variable-speed room air conditioner unit's performance adjustment factor as determined in section 5.4.8 of appendix F to this subpart.

(iii) Round the resulting value from paragraph (f)(5)(ii) of this section to the nearest 0.1 Btu per watt-hour.

In appendix F:

Add in Section 1, *Definitions*:

1.8 "Single-speed" means a type of room air conditioner that cannot automatically adjust the compressor speed based on detected conditions.

1.9 "Variable-speed" means a type of room air conditioner that can automatically adjust the compressor speed based on detected conditions.

1.10 "Full compressor speed (full)" means the compressor speed specified by Midea (Docket No. EERE-2019-BT-WAV-0009-0003) at which the unit operates at full load testing conditions.

1.11 "Intermediate compressor speed (intermediate)" means the compressor speed higher than the low compressor speed by one third of the difference between low compressor speed and full compressor speed with a tolerance of plus 5 percent (designs with non-discrete compressor speed stages) or the next highest inverter frequency step (designs with discrete compressor speed steps).

1.12 "Low compressor speed (low)" means the compressor speed specified by Midea (Docket No. EERE-2019-BT-WAV-0009-0003) at which the unit operates at low load test conditions, such that $Capacity_4$, the measured cooling capacity at test condition 4 in Table 1 of this appendix,

is no less than 47 percent and no greater than 57 percent of $Capacity_1$, the measured cooling capacity with the full compressor speed at test condition 1 in Table 1 of this appendix.

1.13 "Theoretical comparable single-speed room air conditioner" means a theoretical single-speed room air conditioner with the same cooling capacity and electrical power input as the variable-speed room air conditioner unit under test, with no cycling losses considered, at test condition 1 in Table 1 of this appendix .

Add to the end of Section 2.1 *Cooling*:

For the purposes of this waiver, test each unit following the cooling mode test a total of four times: one test at each of the test conditions listed in Table 1 of this appendix, consistent with section 3.1 of this appendix.

Revise Section 3.1, *Cooling mode*, to read as follows:

Cooling mode. Establish the test conditions described in sections 4 and 5 of ANSI/AHAM RAC-1 (incorporated by reference; see 10 CFR 430.3) and in accordance with ANSI/ASHRAE 16 (incorporated by reference; see 10 CFR 430.3), with the following exceptions: Conduct the set of four cooling mode tests with the test conditions in Table 1 of this appendix. Set the compressor speed required for each test condition in accordance with instructions Midea provided to DOE (Docket No. EERE-2019-BT-WAV-0009-0003).

Table 1: Indoor and Outdoor Inlet Air Test Conditions – Variable-Speed Room Air Conditioners

Test Condition	Evaporator Inlet (Indoor) Air, *°F*		Condenser Inlet (Outdoor) Air, *°F*		Compressor Speed
	Dry Bulb	Wet Bulb	Dry Bulb	Wet Bulb	
Test Condition 1	80	67	95	75	Full
Test Condition 2	80	67	92	72.5	Full

Test Condition 3	80	67	87	69	Intermediate
Test Condition 4	80	67	82	65	Low

Replace Section 5.1 to read as follows:

Calculate the condition-specific cooling capacity (expressed in Btu/h), $Capacity_{tc}$, for each of the four cooling mode rating test conditions (tc), as required in section 6.1 of ANSI/AHAM RAC-1 (incorporated by reference; see 10 CFR 430.3) and in accordance with ANSI/ASHRAE 16 (incorporated by reference; see 10 CFR 430.3). Notwithstanding the requirements of 10 CFR 430.23(f), when reporting cooling capacity pursuant to 10 CFR 429.15(b)(2) and calculating energy consumption and costs pursuant to 10 CFR 430.23(f), use the cooling capacity determined for test condition 1 in Table 1 of this appendix.

Replace Section 5.2 to read as follows:

Determine the condition-specific electrical power input (expressed in watts), P_{tc}, for each of the four cooling mode rating test conditions, as required by section 6.5 of ANSI/AHAM RAC-1 (incorporated by reference; see 10 CFR 430.3) and in accordance with ANSI/ASHRAE 16 (incorporated by reference; see 10 CFR 430.3). Notwithstanding the requirements of 10 CFR 430.23(f), when reporting electrical power input pursuant to 10 CFR 429.15(b)(2) and calculating energy consumption and costs pursuant to 10 CFR 430.23(f)(5), use the electrical power input value measured for test condition 1 in Table 1 of this appendix. Notwithstanding the requirements of 10 CFR 430.23(f), when calculating energy consumption and costs pursuant to 10 CFR 430.23(f)(3), use the weighted electrical power input, P_{wt}, calculated in section 5.2.1 of this appendix, as the electrical power input.

Insert a new Section 5.2.1:

5.2.1 *Weighted electrical power input.* Calculate the weighted electrical power input in cooling mode, P_{wt}, expressed in watts, as follows:

$$P_{wt} = \sum_{tc} P_{tc} \times W_{tc}$$

Where:

P_{wt} = weighted electrical power input, in watts, in cooling mode.

P_{tc} = electrical power input, in watts, in cooling mode for each test condition in Table 1 of this appendix.

W_{tc} = weighting factors for each cooling mode test condition: 0.05 for test condition 1, 0.16 for test condition 2, 0.31 for test condition 3, and 0.48 for test condition 4.

tc represents the cooling mode test condition: "1" for test condition 1 (95 °F condenser inlet dry-bulb temperature), "2" for test condition 2 (92 °F), "3" for test condition 3 (87 °F), and "4" for test condition 4 (82 °F).

Add a new Section 5.4, following Section 5.3 *Standby mode and off mode annual energy consumption*:

5.4 *Variable-speed room air conditioner unit's performance adjustment factor.* Calculate the performance adjustment factor (Fp) as follows:

5.4.1 *Theoretical comparable single-speed room air conditioner*. Calculate the cooling capacity, expressed in British thermal units per hour (Btu/h), and electrical power input, expressed in watts, for a theoretical comparable single-speed room air conditioner at all cooling mode test conditions.

$$Capacity_{ss\_tc} = Capacity_1 \times (1 + (M_c \times (95 - T_{tc})))$$

$$P_{ss\_tc} = P_1 \times (1 - (M_p \times (95 - T_{tc})))$$

Where:

$Capacity_{ss\_tc}$ = theoretical comparable single-speed room air conditioner cooling capacity, in Btu/h, calculated for each of the cooling mode test conditions in Table 1 of this appendix.

$Capacity_1$ = variable-speed room air conditioner unit's cooling capacity, in Btu/h, determined in section 5.1 of this appendix for test condition 1 in Table 1 of this appendix.

P_{ss_tc} = theoretical comparable single-speed room air conditioner electrical power input, in watts, calculated for each of the cooling mode test conditions in Table 1 of this appendix.

P_1 = variable-speed room air conditioner unit's electrical power input, in watts, determined in section 5.2 of this appendix for test condition 1 in Table 1 of this appendix.

M_c = adjustment factor to determine the increased capacity at lower outdoor test conditions, 0.0099.

M_p = adjustment factor to determine the reduced electrical power input at lower outdoor test conditions, 0.0076.

T_{tc} = condenser inlet dry-bulb temperature for each of the test conditions in Table 1 of this appendix (in °F).

95 is the condenser inlet dry-bulb temperature for test condition 1 in Table 1 of this appendix, 95 °F.

tc as explained in section 5.2.1 of this appendix.

5.4.2 *Variable-speed room air conditioner unit's annual energy consumption for cooling mode at each cooling mode test condition.* Calculate the annual energy consumption for cooling mode under each test condition, AEC_{tc}, expressed in kilowatt-hours per year (kWh/year), as follows:

$$AEC_{tc} = 0.75 \times P_{tc}$$

Where:

AEC_{tc} = variable-speed room air conditioner unit's annual energy consumption, in kWh/year, in cooling mode for each test condition in Table 1 of this appendix.

P_{tc} as defined in section 5.2.1 of this appendix.

tc as explained in section 5.2.1 of this appendix.

0.75 is 750 annual operating hours in cooling mode multiplied by a 0.001 kWh/Wh conversion factor from watt-hours to kilowatt-hours.

5.4.3 *Theoretical comparable single-speed room air conditioner annual energy consumption for cooling mode at each cooling mode test condition.* Calculate the annual energy consumption for a theoretical comparable single-speed room air conditioner for cooling mode under each test condition, AEC_{ss_tc}, expressed in kWh/year.

$$AEC_{ss\_tc} = 0.75 \times P_{ss\_tc}$$

Where:

AEC_{ss_tc} = theoretical comparable single-speed room air conditioner annual energy consumption, in kWh/year, in cooling mode for each test condition in Table 1 of this appendix.

P_{ss_tc} = theoretical comparable single-speed room air conditioner electrical power input, in watts, in cooling mode for each test condition in Table 1 of this appendix, determined in section 5.4.1 of this appendix.

tc as explained in section 5.2.1 of this appendix.

0.75 as defined in section 5.4.2 of this appendix.

5.4.4 *Variable-speed room air conditioner unit's combined energy efficiency ratio at each cooling mode test condition.* Calculate the variable-speed room air conditioner unit's combined energy efficiency ratio, $CEER_{tc}$, for each test condition, expressed in Btu/Wh.

$$CEER_{tc} = \frac{Capacity_{tc}}{\left(\frac{AEC_{tc} + E_{TSO}}{0.75}\right)}$$

Where:

$CEER_{tc}$ = variable-speed room air conditioner unit's combined energy efficiency ratio, in Btu/Wh, for each test condition in Table 1 of this appendix.

$Capacity_{tc}$ = variable-speed room air conditioner unit's cooling capacity, in Btu/h, for each test condition in Table 1 of this appendix, determined in section 5.1 of this appendix.

AEC_{tc} = variable-speed room air conditioner unit's annual energy consumption, in kWh/yr, in cooling mode for each test condition in Table 1 of this appendix, determined in section 5.4.2 of this appendix.

E_{TSO} = standby mode and off mode annual energy consumption for room air conditioners, in kWh/year, determined in section 5.3 of this appendix.

tc as explained in section 5.2.1 of this appendix.

0.75 as defined in section 5.4.2 of this appendix.

5.4.5 *Theoretical comparable single-speed room air conditioner combined energy efficiency ratio at each cooling mode test condition.* Calculate the combined energy efficiency ratio for a theoretical comparable single-speed room air conditioner, $CEER_{ss\_tc}$, for each test condition, expressed in Btu/Wh.

$$CEER_{ss\_tc} = \frac{Capacity_{ss\_tc}}{\left(\frac{AEC_{ss\_tc} + E_{TSO}}{0.75}\right)}$$

Where:

$CEER_{ss\_tc}$ = theoretical comparable single-speed room air conditioner combined energy efficiency ratio, in Btu/Wh, for each test condition in Table 1 of this appendix.

$Capacity_{ss\_tc}$ = theoretical comparable single-speed room air conditioner cooling capacity, in Btu/h, for each test condition in Table 1 of this appendix, in Btu/h, determined in section 5.4.1 of this appendix.

AEC_{ss_tc} = theoretical comparable single-speed room air conditioner annual energy consumption for each test condition in Table 1 of this appendix, in kWh/year, determined in section 5.4.3 of this appendix.

E_{TSO} = standby mode and off mode annual energy consumption for room air conditioners, in kWh/year, determined in section 5.3 of this appendix.

tc as explained in section 5.2.1 of this appendix.

0.75 as defined in section 5.4.2 of this appendix.

5.4.6 *Theoretical comparable single-speed room air conditioner adjusted combined energy efficiency ratio for each cooling mode test condition.* Calculate the adjusted combined energy efficiency ratio for a theoretical comparable single-speed room air conditioner, $CEER_{ss\_tc\_adj}$, with cycling losses considered, expressed in Btu/Wh.

$$CEER_{ss\_tc\_adj} = CEER_{ss\_tc} \times CLF_{tc}$$

Where:

$CEER_{ss\_tc\_adj}$ = theoretical comparable single-speed room air conditioner adjusted combined energy efficiency ratio, in Btu/Wh, for each test condition in Table 1 of this appendix.

$CEER_{ss\_tc}$ = theoretical comparable single-speed room air conditioner adjusted combined energy efficiency ratio, in Btu/Wh, for each test condition in Table 1 of this appendix, determined in section 5.4.5 of this appendix.

CLF_{tc} = cycling loss factor for each cooling mode test condition: 1 for test condition 1, 0.971 for test condition 2, 0.923 for test condition 3, and 0.875 for test condition 4.

tc as explained in section 5.2.1 of this appendix.

5.4.7 *Weighted combined energy efficiency ratio.* Calculate the weighted combined energy efficiency ratio for the variable-speed room air conditioner unit, $CEER_{wt}$, and theoretical comparable single-speed room air conditioner, $CEER_{ss\_wt}$, expressed in Btu/Wh.

$$CEER_{wt} = \sum_{tc} CEER_{tc} \times W_{tc}$$

$$CEER_{ss\_wt} = \sum_{tc} CEER_{ss\_tc\_adj} \times W_{tc}$$

Where:

$CEER_{wt}$ = variable-speed room air conditioner unit's weighted combined energy efficiency ratio, in Btu/Wh.

$CEER_{ss\_wt}$ = theoretical comparable single-speed room air conditioner weighted combined energy efficiency ratio, in Btu/Wh.

$CEER_{tc}$ = variable-speed room air conditioner unit's combined energy efficiency ratio, in Btu/Wh, at each test condition in Table 1 of this appendix, determined in section 5.4.4 of this appendix.

$CEER_{ss\_tc\_adj}$ = theoretical comparable single-speed room air conditioner adjusted combined energy efficiency ratio, in Btu/Wh, at each test condition in Table 1 of this appendix, determined in section 5.4.6 of this appendix.

W_{tc} as defined in section 5.2.1 of this appendix.

tc as explained in section 5.2.1 of this appendix.

5.4.8 *Variable-speed room air conditioner unit's performance adjustment factor.* Calculate the variable-speed room air conditioner unit's performance adjustment factor, F_p.

$$F_p = \frac{\left(CEER_{wt} - CEER_{ss\_wt}\right)}{CEER_{ss\_wt}}$$

Where:

F_p = variable-speed room air conditioner unit's performance adjustment factor.

$CEER_{wt}$ = variable-speed room air conditioner unit's weighted combined energy efficiency ratio, in Btu/Wh, determined in section 5.4.7 of this appendix.

$CEER_{ss\_wt}$ = theoretical comparable single-speed room air conditioner weighted combined energy efficiency ratio, in Btu/Wh, determined in section 5.4.7 of this appendix.

(3) *Representations*. Midea may not make representations about the efficiency of any basic model listed in paragraph (1) for any purpose, including, for example, compliance and marketing, unless the basic model has been tested in accordance with the provisions set forth above and such representations fairly disclose the results of such testing in accordance with 10

CFR 429.15(a).

(4) This interim waiver shall remain in effect according to the provisions of 10 CFR 430.27.

(5) DOE issues this interim waiver to Midea on the condition that the statements, representations, and information provided by Midea are valid. Any modifications to the controls or configurations of a basic model subject to this waiver will render the waiver invalid with respect to that basic model, and Midea will either be required to use the current Federal test procedure or submit a new application for a test procedure waiver. DOE may rescind or modify this waiver at any time if it determines the factual basis underlying the petition for waiver is incorrect, or the results from the alternate test procedure are unrepresentative of a basic model's true energy consumption characteristics. 10 CFR 430.27(k)(1). Likewise, Midea may request that DOE rescind or modify the interim waiver if Midea discovers an error in the information provided to DOE as part of its petition, determines that the interim waiver is no longer needed, or for other appropriate reasons. 10 CFR 430.27(k)(2).

(6) Midea remains obligated to fulfill the certification requirements set forth at 10 CFR part 429.

DOE makes decisions on waivers and interim waivers for only those basic models specifically listed in the petition, not future models that may be manufactured by the petitioner. Midea may submit a new or amended petition for waiver and request for grant of interim waiver, as appropriate, for additional basic models of room air conditioners. Alternatively, if

appropriate, Midea may request that DOE extend the scope of a waiver or an interim waiver to include additional basic models employing the same technology as the basic model(s) listed in the original petition consistent with 10 CFR 430.27(g).

V. Request for Comments

DOE is publishing Midea's petition for waiver in its entirety, pursuant to 10 CFR 430.27(b)(1)(iv).[8] The petition includes a suggested alternate test procedure, as specified in the petition and summarized in section III of this document, to determine the efficiency of Midea's listed room air conditioners. DOE may consider including the alternate procedure specified in the Interim Waiver Order, specified in section IV of this document, in a subsequent Decision and Order.

DOE invites all interested parties to submit in writing by [**INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER***], comments and information on all aspects of the petition, including the alternate test procedure. Pursuant to 10 CFR 430.27(d), any person submitting written comments to DOE must also send a copy of such comments to the petitioner. The contact information for the petitioner is Phil Hombroek, Midea America Research Center, 2700 Chestnut Station Court, Louisville, KY 40299.

[8] The petition did not identify any of the information contained therein as confidential business information.

Submitting comments via *http://www.regulations.gov*. The *http://www.regulations.gov* web page will require you to provide your name and contact information. Your contact information will be viewable to DOE Building Technologies staff only. Your contact information will not be publicly viewable except for your first and last names, organization name (if any), and submitter representative name (if any). If your comment is not processed properly because of technical difficulties, DOE will use this information to contact you. If DOE cannot read your comment due to technical difficulties and cannot contact you for clarification, DOE may not be able to consider your comment.

However, your contact information will be publicly viewable if you include it in the comment or in any documents attached to your comment. Any information that you do not want to be publicly viewable should not be included in your comment, nor in any document attached to your comment. Persons viewing comments will see only first and last names, organization names, correspondence containing comments, and any documents submitted with the comments.

Do not submit to *http://www.regulations.gov* information for which disclosure is restricted by statute, such as trade secrets and commercial or financial information (hereinafter referred to as Confidential Business Information ("CBI")). Comments submitted through *http://www.regulations.gov* cannot be claimed as CBI. Comments received through the website will waive any CBI claims for the information submitted. For information on submitting CBI, see the Confidential Business Information section.

DOE processes submissions made through *http://www.regulations.gov* before posting. Normally, comments will be posted within a few days of being submitted. However, if large volumes of comments are being processed simultaneously, your comment may not be viewable for up to several weeks. Please keep the comment tracking number that *http://www.regulations.gov* provides after you have successfully uploaded your comment.

Submitting comments via email, hand delivery, or mail. Comments and documents submitted via email, hand delivery, or mail also will be posted to *http://www.regulations.gov*. If you do not want your personal contact information to be publicly viewable, do not include it in your comment or any accompanying documents. Instead, provide your contact information on a cover letter. Include your first and last names, email address, telephone number, and optional mailing address. The cover letter will not be publicly viewable as long as it does not include any comments.

Include contact information each time you submit comments, data, documents, and other information to DOE. If you submit via mail or hand delivery, please provide all items on a CD, if feasible. It is not necessary to submit printed copies. No facsimiles (faxes) will be accepted.

Comments, data, and other information submitted to DOE electronically should be provided in PDF (preferred), Microsoft Word or Excel, WordPerfect, or text (ASCII) file format. Provide documents that are not secured, written in English and free of any defects or viruses. Documents should not contain special characters or any form of encryption and, if possible, they should carry the electronic signature of the author.

Campaign form letters. Please submit campaign form letters by the originating organization in batches of between 50 to 500 form letters per PDF or as one form letter with a list of supporters' names compiled into one or more PDFs. This reduces comment processing and posting time.

Confidential Business Information. According to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and exempt by law from public disclosure should submit via email, postal mail, or hand delivery two well-marked copies: one copy of the document marked confidential including all the information believed to be confidential, and one copy of the document marked "non-confidential" with the information believed to be confidential deleted. Submit these documents via email or on a CD, if feasible. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

Factors of interest to DOE when evaluating requests to treat submitted information as confidential include (1) a description of the items, (2) whether and why such items are customarily treated as confidential within the industry, (3) whether the information is generally known by or available from other sources, (4) whether the information has previously been made available to others without obligation concerning its confidentiality, (5) an explanation of the competitive injury to the submitting person which would result from public disclosure, (6) when such information might lose its confidential character due to the passage of time, and (7) why disclosure of the information would be contrary to the public interest.

It is DOE's policy that all comments may be included in the public docket, without change and as received, including any personal information provided in the comments (except information deemed to be exempt from public disclosure).

Signed in Washington, DC, on November 18, 2019.

Alexander N. Fitzsimmons,

Acting Deputy Assistant Secretary

for Energy Efficiency,

Energy Efficiency and Renewable Energy.

Midea America Research Center
2700 Chestnut Station Court
Louisville, KY 40299

3/25/2019

Via Email: *AS_Waiver_Requests@ee.doe.gov*

Assistant Secretary of Energy Efficiency and Renewable Energy
U.S. Department of Energy
Building Technologies Program, Test Procedure Waiver
1000 Independence Avenue, SW
Mailstop EE-5B,
Washington, DC 20585
Daniel Simmons

Re: Petition for Waiver & Application for Interim Waiver Regarding Test Procedure for Room Air Conditioners, Using 10 CFR Part 430, Subpart B, Appendix F.

On behalf of GD Midea Air Conditioning Equipment Co. LTD. **(Midea)**, Midea America Research Center respectfully submits this Petition for Waiver **("Waiver")**, and Application for Interim Waiver **("Interim Waiver")** regarding the Department of Energy ("DOE") Test Procedures for room air conditioners (RACs), pursuant to 10 CFR 430.27 Appendix F.

Midea requests that DOE grant Midea a Waiver and Interim Waiver because the current test procedure does not accurately measure the energy consumption of RACs with variable-speed compressors ("VSC"). Midea requests expedited treatment of this Petition and Application. Midea submits that this request is fully consistent with the approach used in the ***previously granted Interim Waiver*** by LG Electronics Inc. ("LG") [Case Number 2018-003; EERE-2018-BT-WAV-006] dated June 29, 2018. Midea notes that this request is consistent with DOE's authority to grant a Waiver. Midea further submits that it is within the DOE's authority to grant an Interim Waiver to avoid economic hardship and competitive disadvantage of Midea.

1. About Midea

Midea is the world's largest producer of major appliances, and the world's No.1 brand of air-treatment products, air-coolers, kettles, and rice cookers. Midea Group is a world leading technologies group in consumer appliances, HVAC systems, robotics and industrial automation systems, and smart supply chain (logistics). Midea offers diversified products, comprised of

consumer appliances (kitchen appliances, refrigerators, laundry appliances, and various small home appliances), HVAC (residential air-conditioning, commercial air-conditioning, heating & ventilation), and robotics and industrial automation (Kuka Group and Yaskawa joint venture). Midea is committed to improving lives by adhering to the principle of "Creating Value for Customers". Midea focuses on continuous technological innovation to improve products and services to make life more comfortable and pleasant.

Midea's United States affiliate is ***Midea America Corp***, with headquarters at 5 Sylvan Way, Suite 100, Parsippany, NJ 07054 (tel. 973-539-5330) URL: *www.us.midea.com/* . Its worldwide headquarters are located at ***Midea Group*** headquarter building, No. 6 Midea Avenue, Beijiao, Shunde, Foshan, Guangdong, 528311 P.R. China; (tel. 011-86-757-2633-888); URL: *www.midea.com/global*. ***Midea America Research Center***, at 2700 Chestnut Station Court, Louisville, KY 40299, (tel. 502-709-6067). Its Room Air Conditioner headquarters is located at ***GD Midea Air Conditioning Equipment Co. LTD***, No 6. Midea Avenue, Shunde Foshan, Guangdong 528311

2. Basic models subject to the Waiver request

This Petition for Waiver and Application for Interim Waiver is for all of the following basic models of residential room air conditioners manufactured by Midea. All models are in product class 3.

The following Midea Branded Basic Models are listed below:

In Product Class 3. Without reverse cycle, with louvered sides and 8,000 to 13,999 British Thermal Units (BTU)/hour (hr).

MAW08V1DWT (tentative 8,000 BTU/hr Capacity inverter)
MAW08V1QWT (tentative 8,000 BTU/hr Capacity inverter)
MAW10V1DWT (tentative 10,000 BTU/hr Capacity inverter)
MAW10V1QWT (tentative 10,000 BTU/hr Capacity inverter)
MAW12V1DWT (tentative 12,000 BTU/hr Capacity inverter)
MAW12V1QWT (tentative 12,000 BTU/hr Capacity inverter)

3. Requested Waiver

Midea requests the approval to test the energy consumption of the above residential room air conditioners using the same methodology and test procedure detailed in the granted interim waiver by LG Electronics [Case Number 2018-003; EERE-2018-BT-WAV-006] dated June 29, 2018.

Strong demand for advanced energy efficient room air conditioners have led, Midea to design room air conditioners with dramatic energy savings, and the ability to maintain the desired temperature in the home without cycling the compressor motor and fans on and off. In this case,

the compressor responds automatically to surrounding conditions by adjusting the compressor rotational speed from low to high based upon demand. This results in faster cooling and much more efficient operation through optimizing the speed of the compressor to make minimal adjustments as the room temperature rises and falls.

As LG mentions in their initial waiver, the current DOE test procedure requires that room air conditioners be tested only at full-load performance. As such, the test procedure does not take into account the benefits of a VSC accounting for partial load conditions.

Midea requests that the alternate test procedure detailed in section III of the granted interim waiver by LG Electronics [Case Number 2018-003; EERE-2018-BT-WAV-006] dated June 29, 2018 be used to determine the energy consumption of the specific models identified above. The four cooling mode tests highlighted in Table 1 are the best and most appropriate method to capture the actual energy usage of this product.

4. Regulatory framework

DOE's regulations found in 10 CFR 430.27, provide that the Assistant Secretary will grant a Petition to a manufacturer upon, ***"determination that the basic model for which the waiver was requested contains a design characteristic which either prevents testing of the basic model according to the prescribed test procedures, or the prescribed test procedures may evaluate the basic model in a manner so unrepresentative of its true energy consumption characteristics as to provide materially inaccurate comparative data."***

Midea believes that this Petition meets conditions stated above for when DOE will grant a Petition. The current DOE test procedure, 10 CFR 430 Appendix F, requires that RACs be tested at full load conditions and does not make any account for RACs offering variable-speed operation based upon different air test conditions. As a result, Midea's new VSC RACs cannot be tested to the most appropriate test procedure taking full advantage of the benefits of VSC technology. If Midea were to test its VSC RACs to the current test procedure the results of energy would be wholly unrepresentative of the true energy consumption characteristics of the new models.

5. Other manufacturers with similar design characteristics

To Midea's knowledge, the only other models with similar design characteristic are those listed in the appendix of LG Electronics granted Waiver [Case Number 2018-003; EERE-2018-BT-WAV-006] dated June 29, 2018.

6. Additional justification for Interim Waiver Application

a. Strong likelihood that the waiver will be granted

Midea has provided strong evidence that the waiver should be granted. A petition for waiver is appropriate because the VSC RACs should not be tested with the current test procedure that does not accurately test VSC by testing only in the full load condition. These compressors can vary the speed of the compressor based upon the surrounding air conditions and will optimize the energy usage based on these conditions. A RAC without a VSC cannot operate in this fashion. In these RACs the compressor is either on at full capacity or off. The test procedure granted in the waiver provided by LG Electronics on dated June 29, 2018 will appropriately account for energy being used at different test conditions.

Midea has also demonstrated that this approach is consistent with past waiver approaches that other manufacturers have taken to receive DOE waivers.

b. Economic hardship & competitive disadvantage.

In the absence of an Interim Waiver, Midea will lack certainty as to whether it can launch these VSC RACs. Midea predicts strong consumer demand for these VSC RACs, and the inability to market through denial of an Interim Waiver will cause economic hardship and competitive disadvantage to Midea.

There are exceptionally long lead times and significant expenses associated with the design and manufacturer of RACs. Compliance with federally mandated energy consumption standards is a critical design factor for all of Midea's RACs. Any delay in obtaining clarity on this issue will cause Midea to postpone key decisions regarding its investments to build, launch and market these RACs. In the event that this Waiver is not approved, Midea would not be able to move forward with the launch of these models, which would be a multi-million-dollar impact to the company and would require costly contingency plans and put us at a competitive disadvantage to competitors that market VSC RACs.

7. Certification of notice to other manufacturers

Midea is providing concurrent notice of this Petition for Waiver & Application for Interim Waiver to the other known manufacturers of Room Air Conditioners made or sold in the United States and to the Association of Home Appliance Manufacturers. The cover letters, including names and addresses of other known manufacturers and the industry association, is included in Exhibit A.

8. Conclusion

Midea respectfully requests that the DOE grant the above Petition for Waiver and Interim Waiver. By granting this Waiver, DOE will ensure that consumers will have access to new, innovative and energy efficient variable-speed compressors RACs and Midea will avoid economic hardship and competitive disadvantage.

Thank you in advance for your consideration and prompt response.

Sincerely,
/s/
Phil Hombroek
Manager, Government Relations,
Midea America Research Center

Exhibit A

Arctic Wind Haier

5401 Dansher Rd.
Countryside, IL 60525

Brothers Air Conditioning ATTN: J. McFadden 1320 E Main St.
Rock Hill, SC 29730-5950

CLASSIC
7101 NW 43rd Street Miami,
Florida 33166

Comfortaire Customer Service
P.O. Box 9219
Greenville, SC 29604

Continental Electric c/o CEM Global
ATTN: Customer Service CE North America, LLC
6950 NW 77th Court
Miami, FL 33166

Cool-Living
P.O. Box 893838 Mililani, HI 96789

Costa Mechanical and Air 613 SW Pine Island Rd.
Unit 17
Cape Coral, FL 33991

Crosley
952 Copperfield Blvd NE.
Concord, NC 28025

Danby
ATTN: Greg Hall 5070 Whitelaw Rd
Guelph, ON N1G 6Z9 CANADA
DELLA
19395 E. Walnut Dr. N.
City of Industry, CA 91748-1436

ATTN: Earl F. Jones Appliance Park
Building 2 Room 131
Louisville, KY 40225

Kenmore
ATTN: Martin Olson
3333 Beverly Rd
DC-201-B
Hoffman Estates, IL 60179

Kenmore Elite
ATTN: Martin Olson
3333 Beverly Rd
DC-201-B
Hoffman Estates, IL 60179

Koldfront
500 N. Capital of Texas Hwy Building 5
Austin, TX 78746

Master Craft
19000 Cleaton Dr.
Edmon, OK 73012

NORPOLE
940 N. Central Ave.
Wood Dale, IL 60191-2802

Perfect Aire
5401 Dansher Rd.
Countryside, IL 60525

RCA
180 Marcus Blvd. Hauppauge
New York, New York 11788

Rowa
Shounan Industry Park Ningbo, China

Sea Breeze
3725 Commercial Way Spring Hill, FL 34606

Friedrich
ATTN: Stephen Pargeter 10001 Reunion Pl
Ste 500
San Antonio, TX 78216

Electrolux Home Products, North America PO Box 3900
Peoria, IL 61612

Garrison Heating and Cooling Products c/o Interline Brands
801 West Bay Street
Jacksonville, FL 32204

Global Industrial 11 Harbor Park Dr.
Port Washington, NY 11050

GREE
ATTN: Huang Hui West Jinji West Road
Qian Shan GNG, Zhuhai, Guangdong, 519070 CHINA

SOLEUSAIR
20035 E Walnut Dr N Industry, CA 91789

TCL
1255 Graphite Dr.
Corona, CA 92881

Thermal Zone
c/o United Refrigeration 11401 Roosevelt Blvd.,
Philadelphia, PA 19154

TOSOT
5965 chemin de la cote de liesse
Montréal, QC H4T 1C3

Westpointe
4849 Laurel Ridge Dr.
Riverside, CA 92509

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