ENERGY STAR® Program Requirements
Product Specification for Light Commercial HVAC

Eligibility Criteria
Final Draft, Version 4.0

Following is the Final Draft Version 4.0 ENERGY STAR product specification for light commercial HVAC equipment. A product shall meet all of the identified criteria if it is to earn the ENERGY STAR.

1) Definitions: Below are the definitions of the relevant terms in this document.

A. Commercial Package Air-Conditioning and Heating Equipment[1]: Electrically operated, unitary central air conditioners and central air-conditioning heat pumps used for commercial applications. Small commercial package air-conditioning and heating equipment is rated below 135,000 Btu/h cooling capacity. Large commercial package air-conditioning and heating equipment is rated at or above 135,000 Btu/h and below 240,000 Btu/h cooling capacity.

a) Commercial Unitary Air Conditioner (CUAC): An air conditioner model consists of one or more factory-made assemblies that normally include an evaporator or cooling coil(s), compressor(s), and condenser(s). Air conditioners provide the function of air cooling, and may include the functions of air circulation, air cleaning, dehumidifying, or humidifying.

b) Commercial Unitary Heat Pump (CUHP): A heat pump model consists of one or more factory-made assemblies that normally include an indoor conditioning coil(s), compressor(s), and outdoor coil(s), including means to provide a heating function. Heat pumps shall provide the function of air heating with controlled temperature, and may include the functions of air cooling, air circulation, air cleaning, dehumidifying, or humidifying.

B. Gas/Electric Package Unit: Commercial package air-conditioning and heating equipment with gas heating that is often installed on a slab or a roof.

C. Variable Refrigerant Flow Multi-Split (VRF) Air Conditioner[1]: A unit of commercial package air-conditioning and heating equipment that is configured as a split system air conditioner incorporating a single refrigerant circuit, with one or more outdoor units, at least one variable-speed compressor or an alternate compressor combination for varying the capacity of the system by three or more steps, and multiple indoor fan coil units, each of which is individually metered and individually controlled by an integral control device and common communications network and which can operate independently in response to multiple indoor thermostats. Variable refrigerant flow implies three or more steps of capacity control on common, inter-connecting piping.

[1] Based on 10 CFR part 431, Subpart F §431.92. In case of conflict, the CFR shall be taken as authoritative.

D. Variable Refrigerant Flow Multi-Split (VRF) Heat Pump[1]: A unit of commercial package air-conditioning and heating equipment that is configured as a split system heat pump that uses reverse cycle refrigeration as its primary heating source and which may include secondary supplemental heating by means of electrical resistance, steam, hot water, or gas. The equipment incorporates a single refrigerant circuit, with one or more outdoor units, at least one variable-speed compressor or an alternate compressor combination for varying the capacity of the system by three or more steps, and multiple indoor fan coil units, each of which is individually metered and individually controlled by a control device and common communications network, and which can operate independently in response to multiple indoor thermostats. Variable refrigerant flow implies three or more steps of capacity control on common, inter-connecting piping.

E. Basic Model[1]:

a) Commercial Package Air-Conditioning and Heating Equipment: All units manufactured by one manufacturer within a single equipment class, having the same or comparably performing compressor(s), heat exchangers, and air moving system(s) that have a common "nominal" cooling capacity.

b) Variable Refrigerant Flow Multi-Split: All units manufactured by one manufacturer within a single equipment class, having the same primary energy source (e.g., electric or gas), and which have the same or comparably performing compressor(s) that have a common "nominal" cooling capacity and the same heat rejection medium (e.g. air or water).

F. Energy Efficiency Ratio (EER)[1]: The ratio of the average rate of space cooling delivered to the average rate of electrical energy consumed by the air conditioner or heat pump. This ratio is expressed in Btu per Wh (Btu/Wh). The represented value of EER is determined via the test methods prescribed at 10 CFR Part 431, Subpart F, §431.96, Table 1. For very small equipment covered in this specification, the represented value may alternatively be EER2 measured per the proposed Appendix B1 to 10 CFR Part 431, Subpart F.

G. Coefficient of Performance (COP)[1]: The ratio of the average rate of space heating delivered to the average rate of electrical energy consumed by the heat pump. These rate quantities must be determined from a single test or, if derived via interpolation, must be determined at a single set of operating conditions. COP is a dimensionless quantity.

H. Integrated Energy Efficiency Ratio (IEER)[1]: A weighted average calculation of mechanical cooling EERs determined for four load levels and corresponding rating conditions, expressed in Btu/watt-hour, as measured in Appendix A of Subpart F of 10 CFR part 431 for CUACs and CUHPs or Table 1 of §431.96 of Subpart F of 10 CFR Part 431 for VRFs.

I. Heating Seasonal Performance Factor (HSPF) [1]: The total space heating required in region IV during the space heating season, expressed in Btu, divided by the total electrical energy consumed by the heat pump system during the same season, expressed in watt-hours. The represented value of HSPF is determined via the test methods prescribed at 10 CFR Part 431, Subpart F, §431.96, Table 1. The represented value may alternatively be HSPF2 measured per the proposed Appendix B1 to 10 CFR Part 431, Subpart F.

J. Seasonal Energy Efficiency Ratio (SEER) [1]: The total heat removed from the conditioned space during the annual cooling season, expressed in Btu, divided by the total electrical energy consumed by the air conditioner or heat pump during the same season, expressed in watt-hours. The represented value of SEER is determined via the test methods prescribed at 10 CFR Part 431, Subpart F, §431.96, Table 1. The represented value may alternatively be SEER2 measured per the proposed Appendix B1 to 10 CFR Part 431, Subpart F.

Note: EPA proposes an updated definition for Gas/Electric Package Units that doesn't present the appearance of excluding dual fuel CUHP.

2) Scope:

A. Included Products: Air-cooled, three-phase, split system (i.e., any CUAC or CUHP in which one or more of the major assemblies are separate from the others) and single package (i.e., any CUAC or CUHP in which all the major assemblies are enclosed in one cabinet) central air conditioners, heat pumps, gas/electric package units, and variable refrigerant flow (VRF) multi-split systems with capacity rated to be below 240,000 Btu/h that meet the definitions specified herein are eligible for ENERGY STAR certification, with the exception of products listed in Section 2.B.

B. Excluded Products: Water-cooled, evaporatively-cooled, and water source commercial products are not eligible under this specification. Products covered by other ENERGY STAR specifications are not eligible under this specification. Note that single-phase products below 65,000 Btu/h may be certified as ENERGY STAR under the CAC/ASHP specification.

3) Certification Criteria:

A. Energy Efficiency Requirements:

a. Certification Metric Criteria

Table 1: Criteria for ENERGY STAR Certified CUACs

Equipment Type	Cooling Capacity	Heating Section Type	Minimum Energy Efficiency Criteria
Very Small CUAC (Single Package)	< 65,000 Btu/h	All	16.0 SEER; 12.0 EER **OR** 15.2 SEER2; 11.5 EER2
Very Small CUAC (Split System)	< 65,000 Btu/h	All	16.0 SEER; 12.5 EER **OR** 15.2 SEER2; 12.0 EER2
Small CUAC	≥ 65,000 Btu/h – < 135,000 Btu/h	Electric Resistance (or None)	12.7 EER; 18.0 IEER
		All other	12.5 EER; 17.8 IEER
Large CUAC	≥ 135,000 Btu/h – < 240,000 Btu/h	Electric Resistance (or None)	12.2 EER; 17.0 IEER
		All other	12.0 EER; 16.8 IEER

Table 2: Criteria for ENERGY STAR Certified CUHPs

Equipment Type	Cooling Capacity	Heating Section Type	Minimum Energy Efficiency Criteria
Very Small CUHP (Single Package)	< 65,000 Btu/h	All	16.0 SEER; 11.0 EER; 8.5 HSPF **OR** 15.2 SEER2; 10.6 EER2; 7.2 HSPF2
Very Small CUHP (Split System)	< 65,000 Btu/h	All	16.0 SEER; 12.1 EER; 9.2 HSPF **OR** 15.2 SEER2; 11.7 EER2; 7.8 HSPF2
Small CUHP	≥ 65,000 Btu/h – < 135,000 Btu/h	Electric Resistance (or None)	11.8 EER; 15.3 IEER; 3.5 COP at 47°F; 2.4 COP at 17°F
		All other	11.6 EER; 15.1 IEER; 3.5 COP at 47°F; 2.4 COP at 17°F
Large CUHP	≥ 135,000 Btu/h – < 240,000 Btu/h	Electric Resistance (or None)	11.1 EER; 14.5 IEER; 3.4 COP at 47°F; 2.1 COP at 17°F
		All other	10.9 EER; 14.3 IEER; 3.4 COP at 47°F; 2.1 COP at 17°F

Note: EPA has adjusted the levels for all CUAC and CUHP in response to stakeholder comments on Draft 1.

For Very Small products, EPA was encouraged to align either with CEE Tiers or with the ENERGY STAR CAC/HP Version 6.1 specification for residential equipment in the same size category. EPA has chosen the latter, accepting the reasoning that these are essentially the same equipment. Because the current DOE regulation and test method for this equipment relies on EER, SEER, and HSPF, but regulatory work is underway to switch to EER2, HSPF2 and SEER2 from AHRI 210/240-2023, levels are expressed in both sets of metrics.

For Small and Large products, EPA thanks commenters for their clarity about how the levels relate to each other, technically. EPA has revised all levels so that larger equipment has lower levels and the difference between heating section types is 0.2.

In addition, EPA's detailed conversations with manufacturers led to a reduction of levels for all small and large CUAC and CUHP for two reasons. First, manufacturers clarified anticipated changes to their product offerings in 2023, which led to lower estimates of the model percentage that would meet proposed levels. In addition, while EPA received no new information about product cost or payback, in this price-sensitive market with split landlord-tenant incentives applying to many buildings, first cost assumes an outsize role in decision making.

The levels in this Final Draft balance these considerations with providing significant energy savings per unit and for the program as a whole. EPA also adjusted the calculation of energy savings, basing it on the 2014 and 2015 TSDs but removing some anomalies. EPA estimates that CUACs performing at the proposed ENERGY STAR LC HVAC Version 4.0 levels will provide annual savings of up to 255 kWh per very small unit, 2,812 kWh per small unit and 6,230 kWh per large unit compared to products that perform at the 2023 federal baseline. Similarly, CUHPs at Version 4.0 levels are expected to save 254 kWh per very small unit, 1,521 kWh per small unit and 2,851 kWh per large unit annually.

EPA has not estimated payback because we have not been able to find reliable cost information.

If all CUACs and CUHPs under the scope of this specification sold were to meet these criteria, EPA estimates that the national savings would grow to over 75 TWh, or about 53 MMT CO_2e.

Table 3: Criteria for ENERGY STAR Certified Light Commercial VRF Multi-Split Systems*

Equipment Type	Cooling Capacity	Heating Section Type	Minimum Energy Efficiency Criteria
Very Small VRF Air-Cooled Air Conditioner	< 65,000 Btu/h	All	16.0 SEER; 12.5 EER **OR** 15.2 SEER2; 12.0 EER2
Small VRF Air-Cooled Air Conditioner	≥ 65,000 Btu/h – < 135,000 Btu/h	All	12.0 EER; 17.4 IEER
Large VRF Air-Cooled Air Conditioner	≥ 135,000 Btu/h – < 240,000 Btu/h	All	11.3 EER; 16.4 IEER
Very Small VRF Air-Cooled Heat Pump	< 65,000 Btu/h	All	16.0 SEER; 12.1 EER; 9.2 HSPF **OR** 15.2 SEER2; 11.7 EER2; 7.8 HSPF2
Small VRF Air-Cooled Heat Pump	≥ 65,000 Btu/h – < 135,000 Btu/h	Without Heat Recovery	11.8 EER; 17.4 IEER; 3.4 COP at 47°F
		With Heat Recovery	11.6 EER; 17.2 IEER; 3.4 COP at 47°F
Large VRF Air-Cooled Heat Pump	≥ 135,000 Btu/h – < 240,000 Btu/h	Without Heat Recovery	10.9 EER; 16.4 IEER; 3.25 COP at 47°F
		With Heat Recovery	10.7 EER; 16.2 IEER; 3.25 COP at 47°F

* VRF models must meet these requirements in ducted, ductless, and mixed configurations to be certified.

Note: The criteria proposed for VRF are slightly updated from the first draft. The EER criterion for large VRF AC was reduced, reflecting the principle that larger units should have lower EER and IEER criteria. In addition, for Very Large heat pumps, the COP at 47°F has been eased slightly to reflect current products on the market.

As for Very Small CUAC and CUHP, EPA has revised the proposed criteria to align with the ENERGY STAR Version 6.1 Central AC/Heat Pump specification.

EPA expects to revisit the test methods and levels for Small and Large VRF products in the next 12 months, in response to pending DOE action. New minimum efficiency standards are expected to have a compliance date of 1/1/24, and a new test method (AHRI 1230-2021) to be adopted. We hope that an amendment to update the test method is all that will be needed.

B. Cold Climate Heat Pumps: For purposes of ENERGY STAR certification, a Heat Pump model may be designated as Cold Climate if it meets the following:

a. Certification Metric Criteria:

Table 4: Energy-Efficiency Criteria for Certified Cold Climate Light Commercial Heat Pumps*

Equipment Type	Cooling Capacity	Minimum Energy Efficiency Criteria
Very Small CUHP (Single Package)**	< 65,000 Btu/h	16.0 SEER; 9.5 HSPF **OR** 15.2 SEER2; 8.1 HSPF2
Very Small CUHP (Split System)**	< 65,000 Btu/h	16.0 SEER; 9.5 HSPF **OR** 15.2 SEER2; 8.1 HSPF2
Small CUHP	≥ 65,000 Btu/h – < 135,000 Btu/h	TBD
Large CUHP	≥ 135,000 Btu/h – < 240,000 Btu/h	TBD
Very Small VRF Air-Cooled Heat Pump**	< 65,000 Btu/h	16.0 SEER; 9.5 HSPF **OR** 15.2 SEER2; 8.1 HSPF2
Small VRF Air Cooled Heat Pump	≥ 65,000 Btu/h – < 135,000 Btu/h	18.9 IEER; 3.4 COP at 47°F; 2.25 COP at 17°
Large VRF Air Cooled Heat Pump	≥ 135,000 Btu/h – < 240,000 Btu/h	18.0 IEER; 3.25 COP at 47°F; 2.07 COP at 17°F

* VRF models must meet these requirements in ducted, ductless, and mixed configurations to be certified.
** In addition to meeting these criteria, very small CUHP and VRF must demonstrate low ambient performance according to section 3.B.b. below.

b. Low Ambient performance for Very Small Cold Climate Heat Pumps: Heat pumps shall demonstrate low ambient performance through one of two paths.

i. Using Proposed Appendix B1 to 10 CFR part 431, Subpart F[2]:

- COP at 5° F ≥ 1.75, measured in accordance with the Appendix B1 $H4_{Full}$ test.
- Percent of Heating Capacity at 5°F ≥ 70% of that at 47°F, with the 5° F capacity measured per Appendix B1 $H4_{Full}$ test and the 47°F capacity

[2] See 86 FR 70316, 70346-70347 (Dec. 9, 2021). EPA intends to update this specification to adopt the final regulation when the regulatory action is complete.

measured as the nominal heating capacity per Appendix B1 (i.e., from the Appendix B1 $H1_N$ test for units having a variable-speed compressor where the compressor speed shall be the maximum speed that the system controls would operate at 47°F, otherwise from the Appendix B1 $H1_2$ test)

- Perform a controls verification procedure (CVP)[3] to confirm that the above performance metrics measured at the Appendix B1 low ambient test point at 5° F are achieved by the native controls operating as they would in the field.

ii. Models of very small heat pumps (i.e., commercial package heat pumps and VRF with cooling capacity <65,000 Btu/h) that are otherwise identical to central air conditioner and heat pump models (meaning differing only in phase of the electrical system and the phase of power input for which the motors and compressors are designed), may be recognized as cold climate if the corresponding single phase models are recognized as cold climate under the ENERGY STAR Central Air Conditioner and Heat Pumps Version 6.1 specification.

Note: EPA thanks stakeholders for the extensive and detailed feedback we received on the Draft 1 proposal for commercial cold climate heat pumps. The proposed criteria have been revised substantially in response.

On the question of whether maintaining capacity or ensuring a high COP at low ambient temperatures mattered more, feedback was clearly split. Those who thought more about VRF units felt strongly that COP was more important, because whatever the heating capacity was at the design temperature, the system could be sized to meet the load there. On the other hand, for those who thought more about unitary systems, maintaining capacity to avoid the use of backup heat was more important. EPA notes that VRF systems are typically used in new construction and in deep retrofits, where there is a great deal of freedom in sizing the system. In contrast, unitary systems are largely used in retrofits, where EPA learned that a system much heavier or larger than the system being replaced can be considerably more expensive because of the limitations of the roof it's mounted on. From this we conclude that COP is more important for VRF systems, and capacity maintenance for unitary systems.

The updated VRF proposal reflects this understanding by removing capacity maintenance criteria. In addition, the proposal has been adjusted to align more closely with products advertised by manufacturers and proven in the field as capable of cold climate performance, providing purchasers the best balance of affordability and efficiency. To this end, EPA has reduced COP requirements at 47°F and removed EER requirements. With these updated criteria, EPA cold climate recognition and the Northeast Energy Efficiency Partnerships (NEEP) cold climate VRF recognition can support each other. We also propose higher IEER with the understanding that products meeting other requirements for recognition will also meet this IEER. However, if a lower IEER requirement would allow less expensive units that also have excellent low ambient performance to enter the market, we could use the Draft 1 IEER requirement. We welcome feedback on this point.

[3] See ENERGY STAR Cold Climate Heat Pump Controls Verification Procedure

We have decided to delay recognition of unitary cold climate products in order to consider possible levels more thoroughly without delaying finalization of the rest of the specification. In addition, several other entities are working on specifications for cold climate unitary equipment, and this will allow time to coordinate with them. EPA expects to add criteria within a year.

For very small heat pumps, EPA has aligned with the ENERGY STAR V6.1 CAC/HP cold climate recognition. Demonstration of low ambient performance would ideally be the same as in that specification as well, however, the misalignment of test method timing makes that challenging. We have referenced the proposed Appendix B1 to Subpart F to 10 CFR Part 431, but also propose allowing a second pathway to demonstrate low ambient performance relying on the equivalency with residential models (single phase) recognized as cold climate heat pumps. The proposed DOE regulation already accounts for using tests of single-phase units to derive ratings of equivalent 3-phase models for rated values, so adding this path for the low ambient performance should allow recognition with minimal test burden. We do not expect to finalize these criteria along with the rest of the specification, and welcome stakeholder feedback on this proposal. We hope to finalize promptly based on further feedback and discussion.

C. Gas/Electric Package Units: To certify for ENERGY STAR or ENERGY STAR Cold Climate, a gas/electric packaged unit shall meet the appropriate requirements in Tables 1, 2, 3, or 4, above. Additionally, it must provide at least 2 distinct stages of heating. The compressor heating in a heat pump may be considered one heating stage.

Note: EPA received extensive feedback on our proposal to require modulating or 3-stage gas sections in gas packs. It is clear that fewer products would meet this proposal than we had thought, and there was strong support for our avoiding requiring condensing performance. Also, while it was clear that staged or modulating gas sections provide better occupant comfort, we could draw no conclusion on whether they saved energy. In addition, many commenters were eager to make sure that dual fuel units combining a heat pump with a gas section were available at reasonable cost, as a next step toward decarbonization. EPA agrees that replacement of existing AC gas packs with HP gas packs has great promise to deliver immediate carbon emission reduction and long-term acceptance for heat pumps in commercial heating. In response, EPA has eased requirements to 2 stages of heating.

D. Refrigerant Type Reporting Requirement: Manufacturers shall indicate the type of refrigerant(s) used in products as part of the ENERGY STAR certification process.

Note: Commenters wanted to understand why EPA proposes refrigerant reporting. A wide variety of stakeholders have requested this information be available for all ENERGY STAR products, to further local decarbonization efforts.

E. Significant Digits and Rounding:

a. All calculations shall be carried out with actual measured (unrounded) values.

b. Unless otherwise specified in this specification, compliance with specification limit shall be evaluated using directly measured or calculated values without any benefit from rounding.

c. COP shall be expressed in multiples of the nearest 0.01.

d. IEER shall be expressed in multiples of the nearest 0.1.

e. Capacity shall be expressed as mentioned in Table 6, below.

Table 6: Rounding Requirements for Capacity

Capacity Ratings, Btu/h	Multiples, Btu/h
65,000 up to 135,000	1,000
136,000 up to 400,000	2,000

4) Test Requirements:

A. One of the following sampling plans shall be used for purposes of testing for ENERGY STAR certification:

a. A single unit is selected, obtained, and tested. The measured performance of this unit and of each subsequent unit manufactured must be equal to or better than the ENERGY STAR specification requirements. Results of the tested unit may be used to certify additional individual model variations within a basic model as long as the definition for basic model provided in Section 1, above, is met; or

b. Units are selected for testing and results calculated according to the sampling requirements defined in 10 CFR part 429, Subpart B § 429.43. The certified rating must be equal to or better than the ENERGY STAR specification requirements. Results of the tested unit may be used to certify additional model variations within a basic model as long as the definition for basic model provided in Section 1, above, is met. Further, all individual models within a basic model must have the same certified rating based on the applicable sampling criteria. This rating must be used for all manufacturer literature, the qualified product list, and certification of compliance to DOE standards.

B. When testing light commercial HVAC equipment, the following test method shall be used to determine ENERGY STAR certification. Note that several equipment types have two options for test method (and accompanying metrics), reflecting the changing landscape of Federally mandated test methods. Each model number should use the metrics associated with the test method it is certified with, and may recertify using the more up to date test method when needed.

Table 7: Test Method for ENERGY STAR Certification

System Type	Test Method Reference	ENERGY STAR Requirement
Very Small CUAC	10 CFR part 431, Subpart F, §431.96, Table 1	EER, SEER
	OR	
	Proposed Appendix B1 to 10 CFR part 431, Subpart F[1]	EER2, SEER2
Very Small CUHP	10 CFR part 431, Subpart F, §431.96, Table 1	EER, SEER, HSPF
	OR	
	Proposed Appendix B1 to 10 CFR part 431, Subpart F[1]	EER2, SEER2, HSPF2
Very Small VRF	10 CFR part 431, Subpart F, §431.96, Table 1	EER, SEER, HSPF
	OR	
	Proposed Appendix B1 to 10 CFR part 431, Subpart F[1]	EER2, SEER2, HSPF2

Very Small Cold Climate CUHP and VRF	Controls Verification Procedure for Residential Heat Pump Low Ambient Performance[2]	Confirmation of 5 °F COP and capacity
Small and Large CUAC	10 CFR part 431, Subpart F, §431.96, Table 1	EER, IEER
Small and Large CUHP	10 CFR part 431, Subpart F, §431.96, Table 1	EER, IEER, COP at 47°F, COP at 17°F
Small and Large VRF	10 CFR part 431, Subpart F, §431.96, Table 1	EER, IEER, COP at 47°F, COP at 17°F

[1] See 86 FR 70316, 70346-70347 (Dec. 9, 2021). EPA intends to update this specification to adopt the final regulation when the regulatory action is complete
[2] See ENERGY STAR Cold Climate Heat Pump Controls Verification Procedure

Note: EPA has revised Table 7 (along with metrics used throughout the specification) to more accurately reflect the state of test methods for each equipment class. Many of these equipment classes are in the midst of test method change, and in some cases, we have left manufacturers two options for test method (and associated metrics). When we revisit this specification in the next 12 months, we will consider updates to Table 7 accounting for change in the interim. This includes finalization of proposals for very small commercial ACs and HPs, and for VRF products.

5) Effective Date: The Light Commercial HVAC specification shall take effect on **January 1, 2023**. To be certified to ENERGY STAR, a product model shall meet the ENERGY STAR specification in effect on the model's date of manufacture. The date of manufacture is specific to each unit and is the date on which a unit is considered to be completely assembled.

Note: EPA anticipates finalizing this specification by April 1, 2022, allowing for our usual 9 month transition period. The transition period allows manufacturers ample time to use up existing stock of catalogs and other printed material that associate the ENERGY STAR mark with currently certified products.

6) Considerations for Future 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 the ENERGY STAR certification is not automatically granted for the life of a product model.

The following items are of interest to EPA and will be examined in future specification revisions.

A. Updated Criteria for Light Commercial VRF Multi-Split Systems: The U.S. Department of Energy is currently reviewing the test method and standard applicable to the VRF equipment covered by the scope of this specification as part of their revision process. Once available, EPA intends to begin development of updated criteria for VRF products to complement the updated regulations.

B. Cold Climate Performance: EPA seeks to further the recognition of high-efficiency products designed to operate in colder climates through the ENERGY STAR Cold Climate certification and intends to routinely update criteria to identify the top performing models in future specification development efforts. To the extent that newly developed test procedures might offer a

standardized way of measuring performance at very low ambient temperatures, EPA is likely to propose the introduction of reporting requirements for such.

C. Controls Verification Procedure (CVP): EPA intends to introduce a CVP for products with variable compressor speeds to confirm that performance metrics measured at low ambient temperature test points are achieved by a unit's native controls operating as they would in a customer's home.

D. Automatic Fault Detection and Diagnostics: EPA understands that proper unit installation and maintenance is critical in sustaining efficient performance and seeks to explore how specification criteria can promote self-detection and diagnostic capabilities in Light Commercial HVAC equipment.

E. Decarbonization: EPA will continue to set program requirements that support national decarbonization strategies and benchmarks.