

Draft 2 Version 2.0 ENERGY STAR Light Commercial HVAC Specification - Comments Summary

| Topic | Comment | EPA Response |
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| General Data Analysis | One stakeholder stated that examining the AHRI directory to derive performance criteria is insufficient. The specification must be based on product shipments and not product listings. EPA should conduct a research market analysis to assess the number of products sold at the efficiency levels proposed. | EPA does not develop specification criteria based on shipment data. Performance requirements are set using a data set that is intended to be representative of the market. EPA then sets performance levels that corresponds to the top tier of models in that dataset. |
| | One stakeholder stated that current data in the directory is mostly based on HCFC-22 units, which will be obsolete beginning on Jan 1, 2010 when refrigerant HCFC-22 may no longer be produced or imported in newly manufactured equipment. The current data in the AHRI directory are not representative of product offerings that will be available next year and cannot be used to set the specification. | EPA has developed specification criteria based on available data in the AHRI Directory of Certified Products. EPA welcomes additional data and information that industry is willing to share to aid EPA in conducting a comprehensive review of commercial HVAC equipment. |
| Tier 2 Levels | One stakeholder suggested that EPA not address levels for Tier 2 at this time. When evaluating future ES requirements, EPA should consider CEE Tier 2 as one possibility when actual market conditions warrant a change in distinction. | EPA has decided not to propose Tier 2 requirements until 2010. EPA intends to review performance data for all equipment categories beginning in 2010 to determine appropriate efficiency requirements for Tier 2 to be in effect July 1, 2011. |
| <65,000 Btu/h AC/HP - Single Package | One stakeholder stated that EPA should align packaged AC and HP with CEE's Tier 1 (an increase in EER from 11.0 to 11.6). | Based on EPA's review of the AHRI Directory of Certified Products, while the compliance rates for <65K Btu/h single package equipment are similar at 11.0 and 11.6 EER, EPA proposes to align with ENERGY STAR levels for residential single-phase AC/HP rated below 65K Btu/h for Tier 1 (11.0 EER). EPA will conduct another review of performance data beginning in 2010 to determine appropriate requirements for Tier 2 for this product category. |
| | One stakeholder recommended that EPA not increase requirements for Tier 2 as the volume of these products is very low. | |
| <65,000 Btu/h AC/HP - Split Systems | One stakeholder stated that EPA must take into account that 3-phase products represent less than 7% of shipment for all AC/HP less than 65K Btu/h. Based on AHRI 2008 shipment data, 19.3% of all split AC (single- and 3-phase) were at 14 SEER and above, well below the 25% threshold. Accounting for minimum 12 EER, the commenter estimates the percentage to be less than 10%. The same is true for split system heat pumps. The commenter recommends 14 SEER, 11 EER, 8.0 HSPF for split systems. | As mentioned above, ENERGY STAR energy efficiency specifications are based on available models in the market and not shipment data. Based on EPA's review of the AHRI Directory of Certified Products, the compliance rate of HP equipment at HSPF 8.5 is 4%, which falls far below EPA's target goal of 25%. Therefore, EPA proposes to maintain the HSPF value of 8.2 for Tier 1 for this product type. |

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| | <p>One stakeholder recommended aligning HP levels with CEE Tier 1 and increasing proposed HSPF from 8.2 to 8.5.</p> | <p>EPA's review of the AHRI Directory shows the compliance rate of HP split system equipment at 14 SEER, 11 SEER, 8.0 HSPF to be above 50%, which does not meet EPA's target of 25%. Based on available model data, EPA proposes 14 SEER, 11 EER, 8.2 HSPF for this equipment type at which the compliance rates are closer to EPA's target goals.</p> |
| Heating Section Type | <p>One stakeholder stated that EPA should allow for a 0.2 EER/IEER deduction for equipment with gas heat. The deduction is necessary to account for the additional pressure drops (increased fan power consumption) caused by the gas heating element. The deduction would align with ASHRAE and DOE standards.</p> | <p>EPA took this input into consideration and has sub-categorized CAC equipment between 65,000 Btu/h and under 240,000 Btu/h based on heating section type. Proposed EER and IEER levels for gas heating section type equipment are set 0.2 lower than proposed EER and IEER requirements for electric resistance equipment.</p> <p>EPA did not sub-categorize air-source heat pumps by heating section type as heat pumps with a gas heating element greater than 65,000 Btu/h are not currently available in the marketplace.</p> |
| 65,000 Btu/h to <135,000 Btu/h AC/HP | <p>Several stakeholders noted that the proposed minimum energy efficiency criteria for air-source air conditioners with capacities between 135,000 and 240,000 Btu/h should be lower than those for air-source air conditioners with capacities between 65,000 and 135,000 Btu/h. As system capacities increase, efficiency generally decreases incrementally. One stakeholder proposed 11.7 EER and 11.8 IEER for Tier 1 for 65K to 135K Btu/h category and 11.5 EER and 11.6 IEER for Tier 1 for 135K to 240K Btu/h category.</p> | <p>EPA revisited the AHRI Directory of Certified Products for CAC equipment between 65,000 Btu/h and <135,000 Btu/h on September 4, 2009 and found the compliance rate at the proposed level of 11.5 EER to be 42% for electric resistance equipment. Therefore, EPA is proposing 11.7 EER for electric resistance CAC equipment. The compliance rate at 11.7 EER is 24%, which meets EPA's goal of representing the top 25% of models available in terms of energy efficiency.</p> |
| | <p>A couple of stakeholders proposed 11.5 EER and 11.6 IEER (with 0.2 EER/IEER deduction for gas heat) for AC equipment.</p> | <p>Upon review of available model data in the AHRI Directory for ASHP equipment between 65,000 Btu/h and <135,000 Btu/h, EPA determined that the compliance rates at the EPA's Draft 2 proposed and industry-proposed levels of 11.5 EER and 11.3 EER are approximately 9% and 15%, respectively. Based on this analysis, EPA proposes to adopt stakeholders' suggestion of 11.3 EER for ASHP equipment for this size category.</p> |
| | <p>One stakeholder recommended that EPA increase the COP value from 3.35 to 3.4 for HP.</p> | |
| | <p>A couple of stakeholders stated that levels for HP should be lower than AC-only units. They recommended 11.3 EER and 11.4 IEER (with 0.2 EER/IEER deduction for gas heat units).</p> | |
| | <p>A couple of stakeholders suggested 11.3 EER and 11.4 IEER (with 0.2 EER/IEER deduction for gas heat) for Tier 1 for AC equipment.</p> | <p>Based on available model data in the AHRI Directory, the compliance rates for AC equipment with EER values below 11.7</p> |

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| 135,000 Btu/h to <240,000 Btu/h AC/HP | One stakeholder proposed 11.5 EER and 11.6 IEER for Tier 1 for AC equipment. | are far above 25%. EPA has proposed to set the same performance level of 11.7 EER for AC electric resistance equipment rated between 65,000 Btu/h and 135,000 Btu/h and 135,000 Btu/h and 240,000 Btu/h. |
| | One stakeholder proposed 10.9 EER, 11 IEER, 3.25 COP @ 47F (with 0.2 EER/IEER deduction for gas heat) for HP. | EPA considered stakeholder input for HP performance levels and has proposed 10.9 EER, 11 IEER, and 3.25 COP for all heat pumps of this size category. |
| | One stakeholder supports EPA's proposal for HP levels. | |
| COP Clarification | One stakeholder stated that COPs proposed by EPA are calculated at a 47 degree Fahrenheit outdoor temperature, and EPA should clarify this in the specification. | EPA has modified the COP requirement to state that COP is calculated at 47 degree Fahrenheit. |
| IEER Levels | One stakeholder requested that EPA provide the basis for those IEER levels proposed in the specification and any supporting calculations if available. | Based on very limited available IEER data, EPA intends to incorporate AHRI's recommendation for IEER levels (0.1 higher than EER values) in the ENERGY STAR specification until IEER data becomes available for review in 2010. |
| >240,000 Btu/h Sizes | One stakeholder asked EPA to provide rationale for limiting the proposed ES specification to equipment <240K Btu/h and consider adopting the CEE Tier 1 categories and levels for equipment greater than 240K Btu/h. | EPA will consider larger size equipment once AHRI has a certification program in place for >240K Btu/h equipment. |
| VRF Multi-Split Equipment | A couple of stakeholders suggested that EPA incorporate a definition of VRF multi-split system referenced in AHRI Standard 1230. | EPA has incorporated the definition of VRF multi-split equipment as stated in AHRI Standard 1230 in Version 2.0. EPA also references AHRI 1230 as the appropriate test procedure for VRF equipment in the specification. EPA is including VRF multi-split equipment in the Version 2.0 specification for light commercial HVAC equipment with the same effective date for which the equipment may be eligible for qualification. |
| | Several stakeholders suggested test procedure AHRI 1230 be specified in Version 2.0 as the appropriate test procedure for VRF multi-split equipment. | |
| | One stakeholder stated that EPA should adopt appropriate transition provisions that allow for immediate ENERGY STAR designation of VRF multi-split systems qualifying under the current program, rather than requiring manufacturers to wait for the January 1, 2010 effective date of Version 2.0. | |
| Specification Effective Date | One stakeholder stated that the proposed January 1, 2010 effective date for Version 2.0 is appropriate. | EPA proposes to extend the specification effective date for Tier 1 to May 1, 2010 to provide manufacturers additional time to transition product literature and other ENERGY STAR materials prior to the effective date. |
| | Several stakeholders are willing to accept the Jan 1, 2010 effective date if the final specification is consistent with industry recommendations. However, more lead time would be needed if EPA goes beyond these recommendations. | |
| | One stakeholder does not agree with Jan 1, 2010 effective date. | |

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| Third Party Certification | One stakeholder recommended that third-party certification be incorporated in the light commercial HVAC specification. | EPA will consider including third party certification requirements in the specification going forward. |
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