

REF No.	Topic	Comment	EPA Response
1	Definitions	Commenter commends EPA for its efforts to harmonize with the DOE definitions, but notes minor changes are needed to exactly match the definitions of Room Air Conditioner and Reverse Cycle Room Air Conditioner. Commenter also notes importance of keeping the ENERGY STAR definitions harmonized with DOE at all times in order to achieve consistency.	EPA has harmonized the definitions to match the appropriate DOE and ASHRAE definitions. EPA will continue to work with stakeholders to keep definitions up-to-date and where applicable, consistent with DOE Appliance Standards Program definitions.
2	Fan-Only Mode	Commenter states that DOE has noted in the past that it is very difficult to assess fan-only mode and that considerable research would need to be done in order to fully assess and accurately measure fan-only mode. EPA should not circumvent DOE's expertise by including a mode that DOE has determined should not be included at this time.	In Draft 2, EPA is proposing that ENERGY STAR RACs have an "Energy Saver Mode" which eliminates constant fan operation when the compressor cycles off, and that this mode be the default mode of operation. EPA is not planning to address fan-only mode where a user sets the RAC to provide only ventilation and not cooling, in the current specification revision. However, EPA is interested in additional data related to consumer usage of this mode and energy saving opportunities associated with its use.
3	Market Trigger	Commenter opposes the concept of a 35% penetration trigger for standard revisions within the ENERGY STAR program, adding that the impact of this new approach is unknown and may be undesirable for products such as RACs.	EPA notes that 35 percent market penetration does not trigger a revision, but rather the review of a specification for possible revision. Based on its review, EPA may deem that a revision is unnecessary, in which EPA would not propose modifications to criteria levels. This trigger was established in the EPA-DOE Memorandum of Understanding (MOU) to support the program's priority of continuing to effectively designate the top performing products in the market.
4	Micro-Channel Heat Exchangers	Commenter recommends EPA not include micro-channel heat exchangers as an element for inclusion, and adds that data from the DOE-TSD indicates that the costs of this technology outweigh the savings.	EPA is not specifying RAC heat exchanger technology in the revised specification. However, EPA notes that high performance heat exchangers may enable increased energy efficiency without increasing chassis size and thus, is a technology option that could be used by manufacturers to improve EER performance in order to meet the new levels EPA is proposing in Version 3.0.

5	Product Availability / Timing	<p>One commenter expressed concern regarding a potential lack of product availability and that raising this to an acceptable level would require an unprecedented response from manufacturers. A failure to respond could be very risky for the ENERGY STAR brand and energy efficiency programs.</p> <p>Several commenters opposed the proposed February 2012 effective date, noting this date falls in the beginning of high season for RACs. Manufacturers will not have enough time to ramp up production by the effective date. However, the levels themselves are supported. An effective date of October 2012 or later would better align with production cycles. Keeping the February 2012 date would cause development to be rushed on new models.</p>	<p>In response to this feedback and in recognition of the unique market cycle for this product and limited availability of models on the market now that could meet the proposed EER levels, EPA has proposed a later effective date in Draft 2 of October 1, 2012. EPA appreciates the feedback on the proposed levels, which have been retained in the Draft 2.</p>
6	Refrigerants	<p>Commenter stated alternate refrigerants for some refrigeration products are available, however, similar alternatives for RACs are not available at this time.</p>	<p>EPA is aware that low GWP refrigerants are being developed and tested and notes that in response to the Draft 1, several organizations provided information on hydrocarbon-charged RACs being developed, tested and in some cases, marketed and sold. EPA is not proposing to address alternative refrigerants in this specification revision, but plans to continue to monitor the rapid developments taking place in this field. EPA encourages stakeholders to continue to share information on low GWP refrigerants for RACs.</p>
7	Refrigerants	<p>Several commenters provided information indicating that natural refrigerants, with low GWP, are suitable for small appliances with low refrigerant charges such as RACs. Commenters provided information on efforts of a number of international manufacturers that have begun marketing hydrocarbon air conditioning systems. These comments cited a 2000 study that reviewed and compared the performance between hydrocarbon and non-hydrocarbon refrigerants, which found, on average, hydrocarbons provided almost 10% efficiency gain over non-hydrocarbons. Commenters noted a number of developments in the U.S. that point to a future of hydrocarbons in the U.S. market.</p> <p>One commenter recommended EPA provide a temporary incentive, allowing models that use a low GWP refrigerant to meet a more modest efficiency performance level to qualify for ENERGY STAR.</p>	<p>EPA appreciates this technical and market information on hydrocarbon refrigerants. In other product specifications, EPA has used targeted incentives to encourage the uptake of a new energy savings feature or function that provides value to consumers. EPA plans to continue to examine opportunities for the ENERGY STAR program to help promote reducing the greenhouse gas emissions associated with its products, including RACs. However, EPA questions whether an incentive would be appropriate in this case since data provided by stakeholders suggests that hydrocarbon-based RACs are more efficient on average, than non-hydrocarbon refrigerants. Thus, further strengthening of the minimum efficiency levels of RACs and other HVAC and refrigeration equipment, both in the U.S. and around the world will likely continue to drive interest in low GWP refrigerants. EPA remains interested in stakeholder feedback on how the ENERGY STAR program might address and encourage low-GWP refrigerants in RACs, to reduce the overall GHG emissions associated with RACs.</p>
8	Reverse-Cycle	<p>Commenter stated they don't believe a large numbers of reverse cycle RACs use heating mode and that addressing this mode is not critical at this time.</p>	<p>EPA agrees that addressing this mode is not critical at this time. EPA is not currently proposing requirements associated with this mode.</p>

9	Sampling	ENERGY STAR harmonization with DOE test procedures and requirements is strongly supported. Rather than inserting the regulation text itself in the specification, EPA should consider citing the relevant DOE sections in a similar way to how EPA references test procedures in Section 4.B.	In the Draft 2, EPA has made explicit reference to Department of Energy (DOE) sampling procedures for purposes of qualification testing. This added language formalizes EPA's current practice, which is to allow manufacturers the option to demonstrate qualification based on a single test or leverage testing performed for purposes of minimum efficiency standards.
10	Smart Grid	Strongly encourages the adoption of Smart Appliances and cites the Joint Stakeholders petition to EPA on benefits associated with such appliances.	Consistent with the principle of enhanced consumer value and in response to the Smart Appliance petition EPA received from a joint coalition of industry and efficiency advocate stakeholders, EPA is evaluating how to best address and encourage smart grid functionality in ENERGY STAR specifications. In the near term, EPA is proposing to offer recognition of ENERGY STAR products that are Smart Grid Capable, through the information provided on our Qualified Product List (QPL). In order to take advantage of this opportunity, ENERGY STAR RAC models would need to meet certain criteria proposed in Draft 2. The criteria EPA is proposing build on AHAM/Advocate's smart appliance definition and enhance it with additional communication features that EPA believes can offer additional consumer benefit. In Draft 2, EPA is seeking further feedback on this proposal.
11	Thermal Bridging and Air Infiltration	In order to develop a valid, repeatable, and reproducible test procedure, extensive testing and research would be needed. Therefore thermal bridging and air infiltration should not be included at this time.	EPA does not anticipate including thermal bridging or air infiltration in this specification revision. EPA notes a recent New York Times article (http://www.nytimes.com/2011/04/14/science/earth/14cool.html?_r=2&partner=rss&emc=rss) which discusses the impact that air leakage around a RAC can have on energy efficiency. EPA remains interested in the energy losses associated with thermal bridging and air infiltration, and welcomes data and suggestions for how the EPA ENERGY STAR program might address this issue in a future RAC specification revision.
12	Carry-Over	On average, there is a carry-over of roughly 20% of room air conditioners from one season to the next. Manufacturers need clear guidance on what requirements EPA plans to apply regarding the transition to the new specification. One suggestion is to allow industry to continue selling carry-over products as ENERGY STAR qualified for 12 months.	Consistent with its policy for all product categories covered by ENERGY STAR, RACs that no longer qualify for the ENERGY STAR when Version 3.0 becomes effective cannot be promoted as ENERGY STAR. EPA works with retailers in advance of, and during the specification change, to ensure they have the most current lists of certified products that qualify under the new specification. EPA can provide further guidance at the request of manufacturers or retail partners.