

Appliance Standards Awareness Project
American Council for an Energy-Efficient Economy
Natural Resources Defense Council

March 4, 2013

Ms. Brenda Edwards
U.S. Department of Energy
Building Technologies Program
1000 Independence Avenue, SW
Mailstop EE-2J
Washington, DC 20585

RE: Docket Number EERE-2013-BT-STD-0007/ RIN 1904-AC95: Energy Conservation Standards for Small, Large, and Very Large Commercial Package Air Conditioning and Heating Equipment

Dear Ms. Edwards:

This letter constitutes the comments of the Appliance Standards Awareness Project (ASAP), American Council for an Energy-Efficient Economy (ACEEE), and Natural Resources Defense Council (NRDC) on the request for information (RFI) for commercial air-cooled air conditioners and heat pumps. 78 Fed. Reg. 7296 (February 1, 2013). We appreciate the opportunity to provide input to the Department.

We are pleased that DOE has quickly initiated this rulemaking in response to the statutory requirements included in the American Energy Manufacturing Technical Corrections Act (AEMTCA). We believe that amended efficiency standards for commercial air-cooled air conditioners and heat pumps represent a significant national energy savings opportunity.

Efficiency Descriptor

The RFI states that DOE is considering replacing the existing efficiency descriptor, EER, with IEER.¹ We believe that DOE has the authority to adopt two efficiency metrics,² and we urge DOE to add IEER as an efficiency descriptor while still retaining EER.³ However, if DOE concludes that they do not have the authority to adopt two metrics, we support replacing EER with IEER. We believe that IEER better reflects annual energy consumption than EER since a commercial air conditioner or heat pump very rarely operates at full load. In addition, IEER encourages the adoption of part-load technologies (e.g. variable-speed compressors) that can

¹ 78 Fed. Reg. 7299.

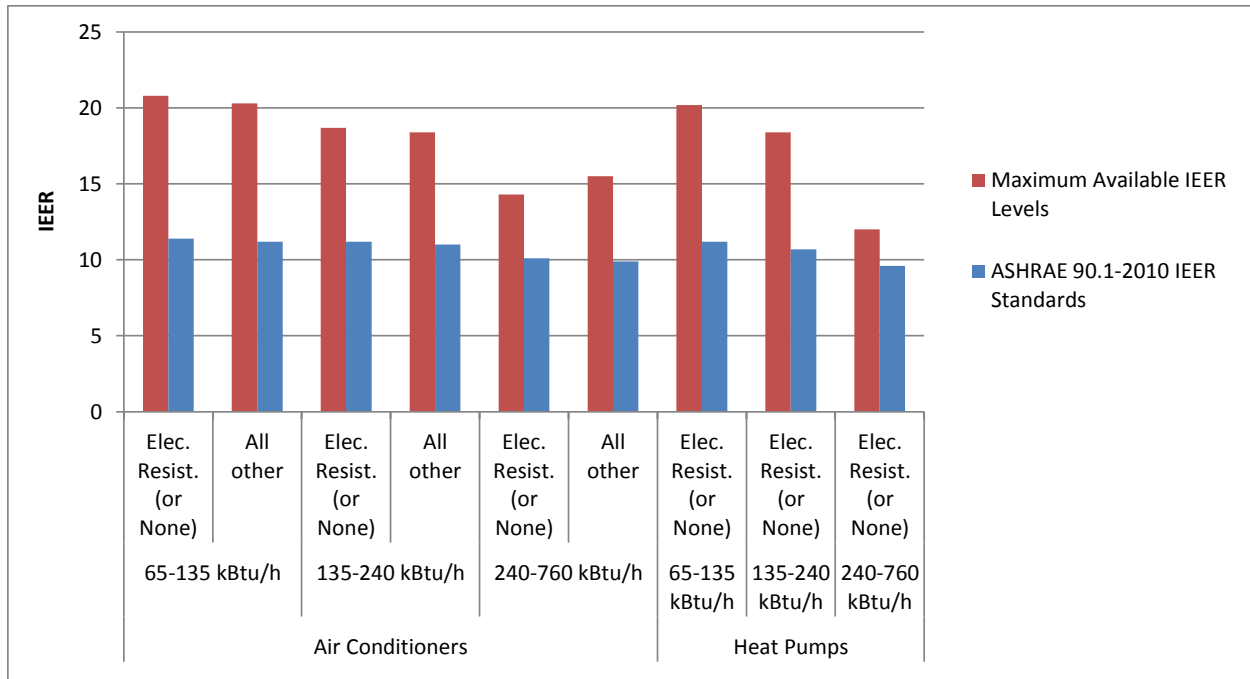
² See comments submitted by Earthjustice and NRDC on March 19, 2010 and comments submitted by Earthjustice, NRDC, AHRI, ASAP, ACEEE, and NEEP on May 17, 2010 to Docket EERE-2008-BT-STD-0006 and Docket EE-2009-BT-STD-0022.

³ Some of us are not looking to increase the EER standards as part of this rulemaking, but believe that the current EER requirements should be retained in order to prevent slippage in EER performance relative to the current standards. Others of us encourage DOE to explore amendments to the current EER standards in addition to adding IEER standards.

achieve significant energy savings in the field. IEER can better capture the real-world benefits of these part-load technologies than EER.

Max Tech Levels

The graph below shows the ASHRAE 90.1-2010 standards for IEER for each equipment category along with the maximum-available IEER levels based on models in the AHRI directory.⁴ The maximum-available IEER levels are 25-82% higher than the ASHRAE 90.1-2010 levels depending on equipment category.



It is important to note that the maximum-available efficiency levels may not represent the maximum technologically feasible levels since there may be technology options that can improve efficiency that have not been employed in the most-efficient models currently available.

Electricity Prices

The RFI states that DOE plans to retain the tariff-based approach from the 2004 ANOPR for the analysis of electricity prices.⁵ We believe that the tariff-based approach is an appropriate method for capturing actual electricity prices paid by customers. There are two important features of commercial air conditioner and heat pump operation which impact customers’ electricity bills for operating this equipment. First, in addition to reducing energy consumption, higher-efficiency commercial air conditioners and heat pumps can also reduce customers’ peak demand. Second, the energy use of commercial air conditioners and heat pumps is generally highest during the

⁴ AHRI directory queried on 2/12/13. We assume that SPY-A units fall in the “all other” heating type category and that the remaining product types (SP-A, RCU-A-CB, RCU-A-C, RC-A, HSP-A, and HRCU-A-CB) fall in the “electric resistance (or none)” heating type category.

⁵ 78 Fed. Reg. 7303.

summer months, when electricity prices tend to be higher. Therefore, it is important for DOE to utilize a methodology for developing electricity prices that takes into account both seasonal variations in electricity prices as well as demand charges.

Lifetime

DOE notes in the RFI that the Department is planning to use the same retirement function that was used for the 2004 ANOPR, with a median lifetime of 15 years.⁶ We encourage DOE to reevaluate the estimated lifetime of commercial air-cooled air conditioners and heat pumps for this rulemaking. ASHRAE maintains a public database that provides information on the service life of HVAC equipment.⁷ Currently, the ASHRAE database does not contain a separate category for commercial package air conditioners and heat pumps. However, the database does contain information on “other cooling equipment.” In this category, there are data on 365 units that were in service at the time of the data collection. Of these 365 units, the median equipment age was 20 years. We encourage DOE to investigate whether this data is indicative of the lifetime of commercial package air conditioners and heat pumps.

Roll-Up vs. Shift Scenario

The RFI states that DOE intends to use a “roll-up” scenario for the national impact analysis, which assumes that equipment efficiencies in the base case that do not meet the standard level under consideration would “roll up” to meet the new standard level.⁸ ENERGY STAR and utility rebates have played a significant role in shifting the market towards higher-efficiency commercial air conditioners and heat pumps. For example, EPA estimates that 33% of shipments of light commercial heating and cooling equipment in 2011 met the ENERGY STAR specifications.⁹ In addition, CEE has a Tier 2 specification for commercial air-cooled air conditioners which exceeds the ENERGY STAR specification. We expect that ENERGY STAR and CEE will revise their specifications in response to any amended efficiency standards, and that utilities will continue to incentivize equipment that exceeds any future minimum efficiency standards. Therefore, we encourage DOE to consider a “shift” scenario for the national impact analysis.

Thank you very much for considering these comments.

Sincerely,

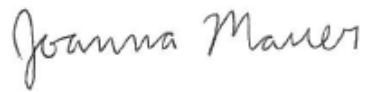
⁶ 78 Fed. Reg. 7303.

⁷ <http://xp20.ashrae.org/publicdatabase/>.

⁸ 78 Fed. Reg. 7304.

⁹ ENERGY STAR Unit Shipment and Market Penetration Report Calendar Year 2011 Summary.

http://www.energystar.gov/ia/partners/downloads/unit_shipment_data/2011_USD_Summary_Report.pdf?c54e-d5a2.



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