DEPARTMENT OF ENERGY

Office of Energy Efficiency and Renewable Energy

10 CFR Part 430

[Docket Number EE–RM–98–440]

RIN 1904–AA77

Energy Conservation Program for Consumer Products; Central Air Conditioners and Heat Pumps Energy Conservation Standards

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

ACTION: Final rule.

SUMMARY: The Department of Energy (DOE) today amends the existing energy conservation standards for central air conditioners and heat pumps by raising the minimum energy efficiency levels by 20 percent for most central air conditioners and heat pumps, with somewhat lower levels for certain space-constrained products. DOE also today withdraws a final rule, published on January 22, 2001, that would have established even higher standards. DOE has determined that the standards in the January 22 final rule, which never became effective, are not economically justified under the Energy Policy and Conservation Act (EPCA). Finally, DOE adopts provisions that clarify the point in time at which DOE's discretion to amend standards becomes limited under EPCA.

DATES: The final rule amending 10 CFR part 430 published January 22, 2001 (66 FR 7170) is withdrawn as of May 23, 2002. The effective date of the amendments to the Code of Federal Regulations in this rule is August 6, 2002.

ADDRESSES: You may read copies of the public comments, the Technical Support Document for Energy Efficiency Standards for Consumer Products: Central Air Conditioners and Heat Pumps (TSD), the transcript of the public hearing, workshop transcripts in this proceeding, the petition for reconsideration submitted by the Air-Conditioning and Refrigeration Institute, and other post-promulgation submissions at the DOE Freedom of Information (FOI) Reading Room, U.S. Department of Energy, Forrestal Building, Room 1E–190, 1000 Independence Avenue, SW., Washington, DC 20585, (202–586–3142), between the hours of 9 a.m. and 4 p.m., Monday through Friday, except Federal holidays. You may obtain copies of the TSD and analysis spreadsheets from the Office of Energy Efficiency and Renewable Energy's (EERE) Web site at: *http://www.eren.doe.gov/buildings/codes_standards/applbrf/central_air_conditioner.html.*

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I. Introduction

DOE today publishes three final rulemaking determinations with respect to amended central air conditioner and heat pump energy conservation standards under section 325 of the Energy Policy and Conservation Act (42 U.S. Code (U.S.C.) Section 6295). First, for reasons described in detail in Section IV of this Supplementary Information, DOE hereby withdraws the January 22, 2001 final rule that would have established 13 as the mandatory Seasonal Energy Efficiency Rating

(SEER) [1] for most central air conditioners and central air conditioning heat pumps (heat pumps). DOE withdraws the final rule because it: (1) Was promulgated without consulting with the Attorney General on potential anti-competitive effects, (2) contained a material defect in the statement of basis and purpose required by the Administrative Procedure Act (APA), (3) contained an effective date in conflict with the Congressional Review Act's lie-before-the-Congress requirement for major rules, and (4) was based on an assessment of benefits and burdens that resulted in an erroneous conclusion that a 13 SEER standard for both central air conditioners and central air conditioning heat pumps would be economically justified under title III, part B of the Energy Policy and Conservation Act (EPCA) (42 U.S.C. 6291 *et seq.*). Second, DOE adopts regulatory provisions that implement section 325(o)(1) of EPCA, including definitions of the statutory terms ''maximum allowable energy use'' and ''minimum required energy efficiency,'' and thereby pinpoints the point in time at which DOE's discretion to alter an amended standard becomes limited. The basis for this determination is discussed in Section III of this Supplementary Information. Third, DOE finalizes 12 SEER and 7.4 Heating System Performance Factor (HSPF) [2] as the amended energy conservation standard for most central air conditioners and central air conditioning heat pumps and adopts lower standards for certain space-constrained products. The basis for these determinations is discussed in Sections V through VII of this Supplementary Information

II. Rulemaking History

The existing standards for residential central air conditioners and heat pumps were prescribed by the National Appliance Energy Conservation Act of 1987 (NAECA) (Pub. L. 100–12) and have been in effect since 1992. The current central air conditioner and heat pump efficiency standards are as follows:

—Split system air conditioners and heat pumps—10 SEER/6.8 HSPF
—Single package air conditioners and heat pumps—9.7 SEER/6.6 HSPF

On September 8, 1993, DOE published an Advance Notice of Proposed Rulemaking (ANOPR) announcing DOE's intention to revise the existing central air conditioner and heat pump efficiency standard pursuant to section 325(d) of EPCA, as amended by NAECA. 58 FR 47326. The fiscal year (FY) 1996 appropriations legislation for DOE imposed a moratorium on proposed and final energy conservation standards. Public Law 104–134. During the moratorium, DOE responded to congressional concern about how the appliance standards program was working by consulting with a broad spectrum of interested persons on possible improvements. As a result, on July 15, 1996, DOE published a new policy on how it would conduct appliance standards rulemaking (61 FR 36974). The new policy, ''Procedures for Consideration of New or Revised Energy Conservation Standards for Consumer Products,'' is commonly referred to as the Process Improvement Rule and is codified at 10 CFR part 430, subpart C, Appendix A. Under this new policy, DOE presented for comment an analytical framework for the central air conditioner and heat pump standards rulemaking during a workshop on June 30, 1998. The analytical framework described the different analyses that DOE would conduct, the methods for conducting them, the use of new spreadsheets, and the relationship of the various analyses. On November 24, 1999, DOE published a Supplemental ANOPR for central air conditioners and heat pumps and invited additional comment on issues raised following publication of the original ANOPR. 64 FR 66306.

DOE published a notice of proposed rulemaking on October 5, 2000 (October 5, 2000 NOPR). 65 FR 59590. The energy efficiency standards that DOE proposed for residential central air conditioners and heat pumps were as follows:

—Split-system and single-package air conditioners—12 SEER
—Split-system and single package heat pumps—13 SEER/7.7 HSPF
—Through-the-wall air conditioners and heat pumps—11 SEER/7.1 HSPF.

In addition to the increase proposed in SEER and HSPF, DOE requested comments on a proposal to adopt a standard for steady-state cooling efficiency, denominated EER (or Energy Efficiency Ratio). The proposal of an EER was designed to ensure more efficient operation at high outdoor temperatures, during periods when electricity use by air conditioners is at its peak. A public hearing was held in Washington, D.C. on November 16, 2000, to hear oral views, data and arguments on the proposed rule.

On January 22, 2001, at the close of the Clinton Administration, DOE published a final rule that would have required a SEER of 13 for all classes of central air conditioners, except for ''niche'' products which were omitted from the rule, and a corresponding HSPF of 7.7 for central air conditioning heat pumps (Final Rule, ''Energy Conservation Program for Consumer Products; Central Air Conditioners and Heat Pump Energy Conservation Standards,'' 61 FR 7170).

Pursuant to President Bush's Regulatory Review Plan,[3] DOE conducted an internal review of the final, not-yet-effective rules issued under section 325 of EPCA that DOE published at the end of the Clinton Administration, including final rules concerning energy conservation standards for clothes washers, water heaters, and central air conditioners and central air conditioning heat pumps. Consistent with the EPCA criteria for determining whether a standard level is economically justified under section 325 (42 U.S.C. 6295(o)(2)(B)), DOE examined each of these three rules to determine, among other things, whether the rulemaking record was complete and whether the affirmative determination of economic justification was based on adequate findings with regard to the statutorily required considerations that make up the test of economic justification.

While DOE examined the three appliance energy conservation standards rulemakings under the President's Regulatory Review Plan, DOE received petitions for reconsideration for each final rule. In addition, DOE received notice that the Gas Appliance Manufacturers Association (with regard to the water heater rule) and the Air-Conditioning and Refrigeration Institute (ARI) and certain manufacturers (with regard to the central air conditioner rule) had filed petitions for review in the United States Court of Appeals for the Fourth Circuit.

Ultimately, DOE decided that neither the clothes washer rule nor the water heater rule warranted further rulemaking action and denied the related petitions for reconsideration. See 66 FR 19714 (April 17, 2001). With regard to central air conditioners and central air conditioning heat pumps, DOE concluded that ARI had raised

[1] The Seasonal Energy Efficiency Ratio or SEER is DOE's measure of energy efficiency for the seasonal cooling performance of central air conditioners and central air conditioning heat pumps.

[2] The Heating Seasonal Performance Factor is DOE's measure of energy efficiency for the seasonal heating performance of heat pumps.

[3] This Plan was set forth in a memorandum from Assistant to the President and Chief of Staff Andrew H. Card, dated January 20, 2001, and published in the Federal Register on January 24, 2001 (66 FR 7702).

substantial questions as to the legal sufficiency of and basis for the January 22, 2001 final rule and that the interests of justice therefore dictated that DOE further postpone the rule's effective date in light of the pendency of ARI's petition for judicial review in the Fourth Circuit and its related petition for reconsideration. 66 FR 20191 (April 20, 2001). At that time DOE indicated that it would likely resolve these issues through supplemental rulemaking that would be forthcoming shortly.

On June 19, 2001, the State of New York, several other states, the Natural Resources Defense Council, Consumer Federation of America, and the Public Utility Law Project sued DOE in Federal court challenging its actions delaying the effective date of the January 22 final rule. The cases were consolidated, with the states of California, Connecticut, Vermont, Maine, New Jersey and Nevada joining the lawsuit (*State of New York et al.* v. *Abraham*, 01 Civ. 5499 (LTS) and 01 Civ. 5500(LTS)(SDNY);[4] a petition for review was also filed with the Court of Appeals for the Second Circuit (Docket No. 01–4103).

On July 25, 2001, DOE granted ARI's petition and published a three part supplemental proposal with regard to energy conservation standards for central air conditioners and central air conditioning heat pumps. 66 FR 38822. First, DOE proposed regulatory provisions to clarify that section 325(o)(1), which qualifies DOE's rulemaking authority to prescribe amended energy conservation standards, applies as of an effective date for modifying the Code of Federal Regulations (CFR) set forth in the notice of final rulemaking and established consistent with the Congressional Review Act (5 U.S.C. 801–804). Second, in order to correct arguable legal errors and policy shortcomings, DOE proposed to withdraw the January 22 final rule. Third, based on a re-assessment of factual information and analyses already in the record, DOE proposed to determine that elevation of the currently enforceable central air conditioner and central air conditioning heat pump energy conservation standards by 20 percent is the maximum increase that is economically justified. For product classes other than through-the-wall products, DOE proposed a SEER of 12 with a corresponding HSPF of 7.4 which would apply to products manufactured in 2006. With respect to through-the-wall product classes, DOE proposed somewhat lower standards. DOE conducted a public hearing in Washington, D.C. on October 2, 2001, to hear oral views, data and arguments on the proposed rule.

[4] On April 25, 2002, the district court dismissed the consolidated actions on the ground that the court lacked subject matter jurisdiction to consider the matters raised by the plaintiffs.

III. Authority of DOE To Reconsider and Withdraw the January 22, 2001 Final Rule and Adopt a 12 SEER Standard for Central Air Conditioners

The issue of DOE's authority to withdraw the January 22 final rule and propose a 12 SEER standard was first raised in ARI's March 23, 2001 petition for reconsideration (ARI, No. 138) and in a responding letter submitted to Secretary Abraham by various environmental organizations on April 6, 2001 (Alliance to Save Energy (ASE), *et al.,* ASE, No. 183). ARI contended that section 325(o)(1) of EPCA, which prohibits DOE from decreasing the maximum allowable energy use or minimum required energy efficiency of covered products, did not apply to reconsideration of the January 22 final rule because DOE had suspended the effective date of the rule (ARI, No. 138 at p. 3, n. 2). This provision has been referred to in the rulemaking as EPCA's ''anti-backsliding provision.'' The environmental advocates took a contrary position, arguing that the anti-backsliding provision did apply and, thus, that DOE was precluded from reconsidering the rule and proposing a less stringent standard (ASE *et al.,* No. 183 at p. 5). In the April 20, 2001, notice postponing the effective date of the January 22 final rule, DOE stated its intention to issue a further notice of proposed rulemaking that would propose a 12 SEER/7.4 HSPF standard for central air conditioners and heat pumps, and stated that it would invite public comment on its explanation of the statutory authority to make such a proposal upon reconsideration of the January 22 final rule (66 FR 20101). Subsequently in the notice of supplemental proposed rulemaking published on July 25, 2001 (July 25 SNOPR), DOE included a detailed explanation of its interpretation of section 325(o)(1) of EPCA. We repeat much of the July 25 SNOPR explanation here as a preface to a discussion of public comments received on this issue. (Repeating DOE's analysis of section 325(o)(1) here also will assist readers who otherwise would have to look back at a copy of the July 25 SNOPR.)

A. DOE's Analysis of EPCA's Anti-Backsliding Provision

The starting point for the analysis of DOE's authority to reconsider the January 22 final rule and propose 12 SEER standards is the text of the statute. Section 325(o)(1) of EPCA provides as follows:

> The Secretary may not prescribe any amended standard which increases the maximum allowable energy use, or, in the case of showerheads, faucets, water closets, or urinals, water use, or decreases the minimum required energy efficiency, of a covered product.

42 U.S.C. 6295(o)(1).

The critical term in section 325(o)(1), as it relates to the rulemaking on central air conditioners and heat pumps, is ''minimum required energy efficiency.'' EPCA does not define this term. However, in context, it is clear that a SEER and an HSPF are benchmarks of ''minimum required energy efficiency'' for central air conditioners and heat pumps. *See* 42 U.S.C. 6295(d)(1) and (d)(2). The key question, however, is which SEER and HSPF represent the ''minimum required energy efficiency'' for central air conditioners and heat pumps that may not be decreased by an amended standard.

Had the new SEER and HSPF set out in the January 22, 2001, final rule been allowed to take effect, but (as the rule set forth) been made applicable only to appliances manufactured on or after January 23, 2006, we think this would be a close question. A reasonable argument could be made that the new SEER and HSPF became ''required'' immediately as to such appliances provided they were manufactured on or after January 23, 2006. A reasonable argument could also be made that the new SEER and HSPF would not be ''required'' until January 23, 2006, when appliances manufactured after that date would have had to comply with them. We address this question, and other considerations bearing on the answer to it, at greater length below.

In fact, however, the January 22, 2001 final rule expressly stated that the amendments it set out to existing standards in the Code of Federal Regulations would not take effect until 30 days after publication in the **Federal Register**. Well before that date arrived, on February 2, 2001, DOE postponed that effective date for an additional 60 days. Before that 60-day period had passed, on April 18, 2001, DOE further postponed the amendments' effective date pending the outcome of petitions by ARI for reconsideration and for judicial review.

As a result, the new SEER and HSPF, though set out in a final rule, never in any sense achieved the status of being the ''required'' ''minimum energy efficiency'' benchmarks. There has never been a single moment under any

understanding of the word ''required'' at which any central air conditioner or heat pump, including one manufactured after January 23, 2006, could even arguably have been legally required to be manufactured in conformity with them. Hence, whatever might have been the case had the January 22 final rule been allowed to take effect, we do not see how the publication of a final rule that would have changed those standards, but was prevented by later agency action from doing so, could possibly establish ''minimum required energy efficiency'' benchmarks.

This interpretation of ''minimum required energy efficiency'' is reinforced by the rest of the sentence in section 325(o)(1) of which the phrase is a part. That sentence establishes a limitation on the ''amended standards'' the Secretary may prescribe. That wording strongly suggests that the ''minimum required energy efficiency'' levels below which the Secretary may not go are the ones established *by the standards being amended.* Because of the various actions postponing the effective date of the amendments to the standards it proposed, the January 22, 2001 rule never actually effectuated any amendment to the prior standards. Therefore, the standards that DOE proposed to amend are not the ones that would have been in place had the amendments set out in the January 22 rule actually been made. Rather, they are the standards prescribed by NAECA (SEER of 10.0 and HSPF of 6.8 for split systems manufactured after January 1, 1992, SEER of 9.7 and HSPF of 6.6 for single package systems manufactured after January 1, 1993), unamended until now by anything, including the never-made-effective amendments set out in the January 22, 2001 rule.

Notwithstanding public comments (discussed below), DOE continues to believe the foregoing analysis establishes that EPCA is unambiguous on the question of whether standards that are published in the **Federal Register**, but not yet effective, represent the ''minimum required energy efficiency'' benchmarks for central air conditioners and heat pumps for purposes of section 325(o)(1). We think it is clear from the statutory text that such standards do not represent the benchmarks for ''minimum required energy efficiency.'' We also believe that even if the statute were found to be ambiguous, for the reasons set out in the discussion that follows, that would not be the interpretation that we should select as a matter of policy.

If published but not yet effective standards are not the benchmarks for ''minimum required energy efficiency'' in section 325(o)(1), the question remains whether DOE should construe the term ''minimum required energy efficiency'' to mean (A) energy efficiency standards that are not yet enforceable against the manufacturers, but that have been prescribed in a final rule amending prior standards, which amendments have been made to the CFR pursuant to an effective date that has passed; or (B) energy efficiency standards that are currently enforceable against the manufacturers if they manufacture and sell a non-compliant product.

DOE believes that alternative (A) is the preferable construction of the term, but only if the effective date selected for the final rule is consistent with other applicable laws and regulations and allows the Secretary an opportunity promptly to correct legal and policy errors that may have been contained in the final rule. If that precondition is satisfied, DOE believes alternative (A) will better advance the relevant statutory and policy considerations underlying section 325(o)(1): To promote greater energy efficiency while providing greater certainty to manufacturers who must plan and make the expenditures necessary to comply with an amended energy conservation standard—which is often a multi-year endeavor with substantial costs. We note that the relative certainty the interpretation set out in alternative (A) produces for manufacturers, which is a key comparative advantage of this interpretation over the competing one, is intimately tied to a proper effective date choice that facilitates prompt error correction, thereby potentially avoiding litigation that would seriously undermine the certainty sought to be achieved.

DOE believes that this resolution of the ambiguities in the statute is consistent with the statute's text, structure, legislative history, and the fundamental policy choices it makes. We believe that on balance this approach better accomplishes the statute's objectives than either adopting alternative (A) without the qualification set out above, thereby establishing a set of procedures that could have the effect of preventing the Secretary, within a short period after publication of a final rule that would modify such standards, from correcting defects in them that come to his attention; or adopting alternative (B), thereby reading the phrase ''minimum required energy efficiency'' to encompass only energy efficiency standards as of the date upon which manufacturers have to comply with those standards. Although at least the latter approach may well be a permissible interpretation of section 325(o)(1), DOE believes that the view set out in our proposed rule is the better one.

The latter view—that a standard is only covered by section 325(o)(1) after manufacturers are required to comply with it—does at first blush appear to be the most natural reading of the phrase. This view, however, is in tension with the rest of the sentence, which, as explained above, suggests that the relevant point of comparison is the standard being amended, regardless of whether manufacturers actually have to comply with it. Moreover, if adopted, this view would allow the Secretary to change the energy efficiency standards right up to the minute before the compliance date. This seems to slight important reliance interests given significant weight in other respects by EPCA's provisions on central air conditioner standards. For example, section 325(d) provides that with respect to central air conditioners, any amended standard contained in a final rule published on January 1, 1994, can apply only to products manufactured on or after January 1, 1999. It similarly provides that any amended standard contained in a final rule published between January 1, 1994, and January 1, 2001, can apply only to products manufactured on or after January 1, 2006. The purpose of these delays is plainly to give manufacturers a significant amount of time to develop and manufacture new products after a new standard is adopted but before it becomes enforceable. These delays also suggest that a change of standard on the eve of the manufacture of a product would be quite disruptive—which stands to reason given the lead-time necessary to be in a position to manufacture a compliant product. Thus, to allow a standard to be blocked at the last minute before the compliance deadline would potentially leave a rather large residual uncertainty difficult to reconcile with the central purpose of establishing a climate of regulatory stability served by these closely related portions of EPCA.

The legislative history of section 325(o)(1), although sparse, also suggests that this interpretation may not be the one best suited to accomplish the statute's objectives. In discussing this provision in the House bill, the House report states:

> DOE may not prescribe an amended standard that increases the maximum allowable energy use or decreases the minimum required energy efficiency of a covered product. The purpose of this requirement is to prevent the Secretary from weakening any energy conservation standard

for a covered product, whether established in this Act or subsequently adopted. *This serves to maintain a climate of relative stability with respect to future planning by all interested parties* * * *

House Report No. 100–11 at p. 22 (emphasis added).

This language suggest that section 325(o)(1) was specifically expected, at least in the view of the House Committee, to act harmoniously with the other provisions of EPCA discussed above in facilitating regulatory certainty. The latter purpose is better accomplished by construing the provision to become applicable at a point well before the compliance date.

On the other hand, the reliance interests at stake also are not best served in the long run by taking the opposite course and adopting the view that section 325(o)(1) becomes applicable at the earliest possible moment. Let us imagine, for example, that DOE were routinely to make final rules containing standards potentially subject to section 325(o)(1) effective as soon as possible under the Administrative Procedure Act (APA). This would likely result in its making such rules effective 30 days after publication. DOE also could refuse to reconsider any aspect of such a rule relevant to the standard (unless it could complete its consideration and correct any errors within that 30-day time period), no matter how serious or legitimate a question might be raised, since to do so effectively, it would have to prevent the standard from going into effect.

This approach, however, would not be the best way for DOE to promote regulatory certainty either. It is common for agencies to entertain petitions for reconsideration at least for a short period after issuance of a final rule as well as to correct errors on their own motion during that time. Moreover, there is good reason why agencies follow this course, since otherwise such errors would have to await the completion of judicial review before they could be corrected, thereby creating substantial delay and uncertainty. Accordingly, this approach too, in addition to running counter to ordinary administrative practices that there is no reason to believe section 325(o)(1) was intended to abrogate, is not the best way to advance the regulatory stability sought by section 325(o)(1) and the other related EPCA provisions discussed above.

With respect to major rules, this approach also would create unnecessary conflict between section 325(o)(1) and the Congressional Review Act (CRA) (5 U.S.C. 801–804) enacted in 1996. Under the CRA, before a final rule can become ''effective,'' DOE must send a report to Congress (5 U.S.C. 801(a)(1)(A) and (B)). With respect to a ''major rule'' within the meaning of 5 U.S.C. 804(2), the CRA provides for the passing of a 60-calendar-day-lie-before-the-Congress period, after submission of the agency report, at the end of which a final rule could become effective in the absence of a Congressional resolution of disapproval (5 U.S.C. 801(a)(3)). CRA allows for an exception to the 60-day-lie-before requirement only if the President determines that a major rule should take effect before the end of that period because of an imminent health or safety threat or other emergency; because it is necessary to the enforcement of criminal laws or national security; or if it is issued pursuant to a statute implementing an international trade agreement (5 U.S.C. 801(c)).

In DOE's view, this last set of considerations also points the way to the answer to the question of at what time amendments to an energy-efficiency-setting-standard should best be viewed as having set ''minimum required energy efficiency'' benchmarks. For the reasons explained at the beginning of this section, that time must be after the final rulemaking the amendments to the standard is in effect. But, consistent with the objective of section 325(o)(1) and the other closely related EPCA provisions of promoting regulatory certainty, and to harmonize section 325(o)(1) with common administrative practice and the CRA, such final rules should ordinarily be made effective only after a reasonable hiatus after the date of publication has elapsed, allowing for prompt use of ordinary administrative error correction procedures and completion of congressional review under CRA. This is the earliest that manufacturer planning in reliance on a final major rule to amend appliance energy conservation standards can realistically be expected to begin. The certainty of the regulatory regime sought to be achieved therefore cannot occur until that time.

Accordingly, DOE believes it should construe section 325(o)(1) as applying to standards designed to set ''minimum required energy efficiency'' benchmarks at the point in time a final rule containing such a standard becomes effective. It also believes, however, that it should take care to select effective dates for final rules containing such standards that are consistent with the CRA and any other applicable law. This approach will best promote the regulatory certainty sought by section 325(o)(1) and its companion provisions and also comports well with the ordinary understanding of when a rule containing such standards has established ''require[ments].''

DOE's decision to exercise its discretion to adopt this interpretation of section 325(o)(1) is not meant to intimate a view with respect to or suggest how anti-backsliding provisions in other statutes should be interpreted. Decisions of that type would of course turn on the specific language and policy of those provisions, just as today's decision did here.

Based on this consideration of the meaning of section 325(o)(1), DOE proposed to adopt a series of amendments to the EPCA rules intended to address these general issues. First, it proposed definitions of the terms ''maximum allowable energy use'' and ''minimum required energy efficiency'' as energy conservation standards established by a final rule that has become effective in the sense that it has modified the Code of Federal Regulations. It further proposed to include in its definition that to qualify, the final rule has to have made that modification on a date selected consistent with the CRA and other applicable law. Finally, in order to avoid confusion, it proposed a technical amendment adding a definition of the EPCA term ''effective date,'' which EPCA, inconsistently with the Office of Federal Register guidance, treats as synonymous with ''compliance date.''

B. Discussion of Public Comments on the Anti-Backsliding Provision

DOE's analysis of section 325(o)(1) and related proposals were the subject of comment by the environmental advocates and by ARI. Their comments elaborated upon the basic positions each had taken in connection with ARI's petition for reconsideration. The environmental advocates prefaced their comments with the observation that ultimately the question whether the anti-backsliding provision prevents DOE from withdrawing the January 22 final rule and proposing a 12 SEER standard would likely be resolved in the Federal litigation previously mentioned (*see* ''Rulemaking History.'').

1. Environmental Advocates'' Views

The environmental advocates, led by the Natural Resources Defense Council (NRDC) and several states, argue that EPCA's anti-backsliding provision applies upon publication of final standards in the **Federal Register**, and that DOE is powerless thereafter to entertain and grant a petition for reconsideration that requests lower

amended standards. (NRDC, No. 250; Attorneys General of New York and Massachusetts, No. 277; State of Vermont, No. 268; Attorney General of California, No. 249).

The NRDC commented that the APA contains no provision for ''withdrawing'' a final rule, and that if DOE wishes to change the rule, it may propose to ''amend, revise or revoke'' the rule consistent with the APA. NRDC also states there is no statutory or regulatory provision allowing interested persons to ''petition for reconsideration'' of a final rule. DOE does not believe these arguments have merit. DOE chose to use the word ''withdraw'' at the suggestion of staff in the Office of the Federal Register. ''Withdraw'' is the term that Office uses to describe the action of an agency in pulling back a rule document before it is officially filed and published in the **Federal Register**. (Document Drafting Handbook, Chapter 4, p. 4–2 (Oct. 1998)). The Office of the Federal Register decided that the word ''withdraw'' also is apt when an agency proposes to rescind a published final rule before it becomes effective, thus pulling it back before it modifies the Code of Federal Regulations. (Document Drafting Handbook, Chapter 2, p. 2–33 (Oct. 1998)). By proposing to withdraw the January 22 final rule and proposing a 12 SEER standard, DOE was proposing actions that, if adopted and implemented in a future final rule, would rescind or repeal the January 22 final rule. This course of action is entirely consistent with the APA. While an agency generally has inherent authority to reconsider its decisions, as the comments of ARI state (ARI, No. 259, at p. 6), the APA specifically gives interested persons the right to petition for rulemaking (5 U.S.C. 553(e)).

NRDC further believes DOE has misconstrued section 325(o)(1) by placing undue weight on the word ''required'' in the term ''minimum required energy efficiency.'' (Several state officials submitted comments similar in most respects to the NRDC views summarized here and in the discussion that follows.) NRDC faults DOE for ignoring the terms ''maximum allowable energy use'' and ''maximum water use'' in the same provision. All of these terms, NRDC argues, are simply measurements of energy conservation and do not refer in any way to compliance dates or requirements for manufacturers. NRDC, therefore, concludes that the word ''require'' is ambiguous and that one needs to look to the entire statutory scheme to determine when the anti-backsliding provision applies.

NRDC argues that the key word in section 325(o)(1) is ''prescribe,'' which it states occurs when a final rule is published in the **Federal Register**, and that it is the act of ''prescribing'' a final rule that triggers application of the anti-backsliding provision. NRDC finds supports for this interpretation of ''prescribe'' in section 325(p), which includes publication of a final rule as the last step in the procedure for prescribing a new or amended standard, and in the deadlines for various amendments of product standards that are determined by reference to the date of publication of the previous standard. NRDC also points to House Report language stating that section 325(o)(1) prevents DOE from weakening any energy conservation standard for a product ''whether established in this Act or subsequently adopted,'' and states that use of the word ''adopted'' confirms its view that the anti-backsliding provision applies when a rule is published in the **Federal Register**. Thus, under NRDC's interpretation, once DOE published the January 22 final rule, it was powerless to reconsider it and propose a lower energy conservation standard.

DOE agrees that the term ''minimum required energy efficiency'' is not the only descriptor of energy or water efficiency used in section 325(o)(1), but it is the only descriptor that applies to standards for central air conditioners and heat pumps. That is why DOE's analysis focuses on the word ''required.'' It is true that for other covered products, the applicable descriptor would be ''maximum allowable energy use'' or ''maximum allowable water use.'' For those products, the key word would be ''allowable.'' But for the same reasons why, as explained in DOE's analysis above, the SEER and HSPF levels set out in the January 22 final rule never in any sense achieved the status of being the ''required'' ''minimum energy efficiency'' benchmarks, it is not much easier to see how a rule that never became effective could set ''maximum allowable'' amounts of water or energy use. At least until a new rule establishing maximum allowable energy or water use became effective, the ''maximum allowable energy'' or ''maximum allowable water use'' for a product subject to one of these standards would remain the preexisting standard. Accordingly, today's rule contains definitions of ''maximum allowable energy use'' and ''maximum allowable water use'' that parallel the definition of ''maximum required energy efficiency'' that DOE adopts.

DOE also thinks NRDC's view of the importance of the word ''prescribe'' in section 325(o)(1) is wrong. The word ''prescribe'' is nowhere defined in EPCA, but it does not necessarily mean ''publication.'' For example, section 325(p), concerning the procedure for prescribing any new or amended standard, provides that ''[a] final rule prescribing an amended or new energy conservation standard or prescribing no amended or new standard for a type (or class) of covered products shall be published as soon as practicable * * *'' 42 U.S.C. 6295(p)(4). The use of the word ''prescribe'' in the same provision in which the word ''publish'' is used is a clear indication that Congress may have considered the two words to have different meanings. It is not necessary to resolve the question of the meaning to the word ''prescribe'' because it begs the critical question of what DOE may not prescribe under section 325(o)(1). With respect to central air conditioners and heat pumps, the what that DOE may not prescribe under section 325(o)(1) is any amended standard ''which increases the * * * minimum required energy efficiency'' of a central air conditioner or heat pump. We continue to believe that standards in a published rule that have never become effective are in no sense ''required'' energy efficiency levels, and therefore cannot be the baseline for determining whether the amended standards increase the minimum required energy efficiency.

Finally, DOE disagrees with NRDC's conclusion that the structure and language of EPCA point to the date of publication of amended standards as the time at which section 325(o)(1) applies. More specifically, DOE does not think the statutory intervals for issuance of amended standards, which reference to the date the previous amendment is published, are relevant to the question of when the anti-backsliding provision applies. The fact that Congress required DOE to periodically review and publish amendments to standards does not seem to have any bearing on the question of what point in time standards are required for purposes of section 325(o)(1).

The Attorneys General of the States of New York and Massachusetts attacked the legality of DOE's February 2, 2001, and April 20, 2001, notices delaying the effective date of the January 22 final rule (Attorneys General of New York and Massachusetts, No. 277). In their view, DOE lacked good cause for not proposing the delays for public comment. They dismiss DOE's analysis of, and provisions for, implementing the anti-backsliding provision as a *post hoc* attempt to justify its allegedly illegal

delays of the January 22 final rule. Implicit in their comment is the view that the January 22 final rule actually became effective and, thus, became the required standards for purposes of section 325(o)(1). Based on this understanding of the anti-backsliding provision, the States of New York and Massachusetts consider DOE's action to withdraw the January 22 final rule and adopt 12 SEER standards to be a ''rollback'' of established standards.

As explained in the February 2, 2001, notice, DOE temporarily delayed the effective date of the January 22 final rule in conjunction with Executive branch wide direction from the Assistant to the President and Chief of Staff. DOE explained that seeking public comment would be impracticable and contrary to the public interest, and further that the imminence of the effective date in the rule constituted good cause for making the temporary delay effective upon publication. 66 FR 8745–46. The further postponement of the effective date on April 20, 2001, was based in part on several reasons why seeking public comment and delaying the effective date of the action were impracticable, unnecessary, and contrary to the public interest. 66 FR 20191. These reasons are not repeated in full here, but DOE explained why in light of ARI's petition for reconsideration and its lawsuit in the Court of Appeals for the Fourth Circuit, DOE concluded there was good cause for further delaying the January 22 final rule's effective date pending consideration of ARI's petition and judicial review. Thus, DOE thinks the short-term delays of the January 22 final rule's effective date to deal with substantial legal questions were lawful, and it rejects the characterization of DOE's proposals as a ''rollback'' of the energy conservation standards.

The Attorneys General of the States of New York and Massachusetts and the American Council for an Energy-Efficient Economy (ACEEE) argued that choosing an effective date for purposes of section 325(o)(1) other than the date of publication of amended standards would lead to delay and cause uncertainty with respect to when manufacturers must make investments needed to comply with amended standards. (Attorneys General of New York and Massachusetts, No. 277 at p. 9; ACEEE, No. 284 at p. 3). The Northeast Energy Efficiency Partnerships, Inc. (NEEP) argued DOE's proposed approach would give stakeholders another opportunity to try to influence decision makers and would ''politicize'' the standard setting process. (NEEP, No. 273 at p. 3). As explained above, DOE does not believe section 325(o)(1) can be reasonably interpreted to apply upon the publication of final standards in the **Federal Register**. However, assuming DOE had the discretion to adopt such an interpretation, DOE would not choose the date of publication as the date for purposes of section 325(o)(1). As explained previously, a practice of routinely making published standards effective in the shortest time after publication (normally 30 days after publication under the APA) is not likely to provide greater certainty about the point in time when standards would take effect. If DOE were unable to respond to legitimate requests for reconsideration and correction of errors, then the only avenues available to aggrieved stakeholders would be lawsuits in Federal courts or efforts to obtain a legislative reversal under the CRA. This would not lead to expeditious correction of errors or resolution of issues and would not advance the goal of regulatory certainty. Such a practice also would create needless conflict with the CRA's 60-day lie-before-the-Congress provision for major rules.

2. ARI's Views

ARI agrees with DOE that the existing ''minimum required energy efficiency'' levels for central air conditioners and heat pumps, which DOE may not lower, are the standards established by NAECA, effective on January 1, 1992 (*i.e.,* 10 SEER/6.8 HSPF for split systems and 9.7 SEER/6.6 HSPF for single package systems). However, ARI believes the term ''minimum required energy efficiency'' should be understood to mean the existing efficiency standard as of the effective date under EPCA, *i.e.,* the date on which the standard is required to be complied with (ARI, No. 259 at p. 19). ARI believes its interpretation would avoid the risk of having the anti-backsliding provision apply unreasonably early, which could prevent DOE from taking appropriate administrative action to correct a promulgated standard or to respond to extraordinarily changed circumstances.

DOE acknowledged in its analysis of section 325(o)(1) that the view that a standard is only covered by the anti-backsliding provision after manufacturers are required to comply with it is an arguable one. This view, however, is in tension with the rest of the sentence, which suggests that the relevant point of comparison is the standard being amended, regardless of whether manufacturers actually have to comply with it. Moreover, by allowing the Secretary to change the energy efficiency standards at any point in time before the compliance date, this view would slight important reliance interests that, as DOE explained in its analysis, are given significant weight by other provisions and the legislative history of EPCA. For these reasons, DOE continues to believe that section 325(o)(1) should be construed as applying to standards designed to set ''minimum required energy efficiency'' benchmarks at the point in time a final rule containing such a standard becomes effective for purposes of revising the Code of Federal Regulations, as long as the effective date that is selected is consistent with the CRA and any other applicable law. In today's rule, DOE adopts provisions that implement this approach.

ARI stated that if DOE adopted the approach it proposed in the July 25 SNOPR, then it would like the definitions of ''minimum required energy efficiency'' and ''maximum allowable energy use'' revised to ensure that DOE has sufficient time to complete any administrative action it takes in response to a petition for reconsideration. ARI recommended adding to each definition the words ''or the date on which DOE completes action on any timely-initiated administrative reconsideration, whichever is later.'' (ARI, No. 259 at pp. 20–21). We think ARI's suggested language is a useful addition to the definitions. Therefore, we have revised the proposed definitions of ''maximum allowable energy use'' and ''minimum required energy efficiency,'' to be added to section 430.2, accordingly. In addition, DOE adds a similar definition of ''maximum allowable water use,'' which was inadvertently omitted in the July 25 SNOPR.

Under the provisions adopted in today's final rule, DOE will select a date for the ''Effective Date'' line of the notice of final rulemaking that in most instances will be 60 to 80 days after the date of publication. (DOE has chosen 75 days after the date of publication for the effective date of today's rule.) DOE would expect that any petition for reconsideration, to be considered timely, ordinarily would be submitted to DOE before the effective date specified in the notice of final rulemaking.

DOE did not receive any public comments on the proposed definition of the term ''effective date'' as used in EPCA and 10 CFR 430.32. This definition clarifies that for purposes of construing the term under EPCA (but not for purposes of determining the point at which amendments to a standard qualify for protection under section 325(o)(1)), the ''effective date'' is

the date on which an amended energy conservation standard becomes enforceable. DOE also did not receive comments on proposed section 430.34, which tracks the language of section 325(o)(1). Therefore, DOE today adopts these provisions without substantive change.

IV. Basis for DOE's Decision To Withdraw the January 22, 2001, Final Rule

In the July 25 SNOPR, DOE discussed possible legal errors in the promulgation of the January 22 final rule and economic issues that DOE believed had not been adequately considered in determining the energy efficiency levels that are the maximum technologically feasible and economically justified (66 FR 38827–29). On the basis of these possible legal and policy errors, DOE proposed to withdraw the January 22 final rule and proposed to adopt a 12 SEER standard for most central air conditioners and heat pumps, rather than the 13 SEER standard in the January 22 final rule (66 FR 38842). DOE today finally withdraws the January 22 final rule and amends the energy conservation standards for central air conditioners and heat pumps at the 12 SEER level except for two types of space-constrained products (through-the-wall products and small duct, high velocity systems) that are subject to lower standards. In taking this action, DOE corrects the legal and policy errors that were the basis for DOE's decision to withdraw the January 22 final rule.

A. Legal Issues

In the July 25 SNOPR, DOE acknowledged that to comply with section 325(o)(2)(B)(i) of EPCA, DOE arguably should have invited the Department of Justice to submit a supplemental statement of its views on the potential anti-competitive impact of a 13 SEER standard for both central air conditioners and heat pumps which was included in the January 22 final rule (66 FR 38827–28).

Section 325(o)(2)(B)(i) requires DOE to determine whether the benefits of a new or amended energy conservation standard exceed its burdens by considering ''to the greatest extent practicable'' seven factors, including: ''(V) the impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from the imposition of the standard'' (42 U.S.C. 6295(o)(2)(B)(i)). Section 325(o) also provides that:

> For purposes of clause (i)(V), the Attorney General shall make a determination of the impact, if any, of any lessening of competition likely to result from such standard and shall transmit such determination, not later than 60 days after the publication of a proposed rule prescribing or amending an energy conservation standard, in writing to the Secretary, together with an analysis of the nature and extent of such impact. Any such determination and analysis shall be published by the Secretary in the **Federal Register**.

42 U.S.C. 6295(o)(2)(B)(ii).

In context, it is clear that the term ''the standard'' in section 325(o)(2)(B)(i) refers to any new or amended energy conservation standard finally prescribed by DOE under section 325(o) of EPCA. Because the Department of Justice must transmit its determination to DOE within 60 days after the publication of a proposed rule, EPCA contemplates that the Department of Justice's determination on the anti-competitive effects of a proposed rule usually will enable DOE to fulfill its substantive obligation to consider the Department's expert opinion on the anti-competitive impact of a final standard. However, as the following discussion shows, this will not always be the case.

DOE submitted the October 5, 2000, NOPR to the Attorney General for review pursuant to the foregoing provisions. The NOPR described the range of potential trial standards considered by DOE, and proposed adoption of Trial Standard Level 3, *i.e.,* a minimum SEER of 12 for central air conditioner product classes and a SEER of 13, with a corresponding HSPF of 7.7, for central air conditioning heat pumps. The Department of Justice, consistent with its past practice, confined its response to the proposed standards, corresponding to Trial Standard Level 3.

The Department of Justice had several concerns about the proposed rule's potential impact on competition (*see* December 4, 2000, letter in the Appendix to this notice). First, the Department of Justice was concerned the proposed rule would have a disproportionate impact on small manufacturers. Second, it was concerned that the proposed standard for heat pumps, and in some instances the standard for air conditioners, would have an adverse impact on some manufacturers of equipment to be used to retrofit existing housing and used in manufactured housing. Third, it was concerned that the proposed 13 SEER for central air conditioning heat pumps could cause consumers to shift from heat pumps to other systems that include resistance heat systems, reducing the competition that presently exists between manufacturers of heat pumps and manufacturers of those other heating systems. The Department of Justice urged DOE to take these concerns into account and consider ''setting a lower SEER standard for heat pumps, such as the standard included in Trial Standard Level 2, and a lower SEER standard for air conditioners for retrofit markets where there are space constraints and for manufactured housing.'' 66 FR 7200.

DOE published a final rule on January 22, 2001, that adopted standards that corresponded to Trial Standard Level 4 (the next higher level) and prescribed a minimum SEER of 13 for all the product classes, except for niche products, with a corresponding 7.7 HSPF. While the preamble to the final rule addressed the Department of Justice's specific concerns about the proposed 12 SEER standards for central air conditioners/13 SEER/7.7 HSPF standard for central air conditioning heat pump systems (66 FR 7192–93), DOE did not have the benefit of the Department of Justice's views on the potential anti-competitive impact of the final 13 SEER standards for both air conditioners and heat pumps. This is particularly of concern in light of information in the TSD indicating that standards at Trial Standard Level 4 (uniform 13 SEER standards) could cause several major manufacturers to consider selling their production assets rather than make the investment required to meet the new standard or face the loss of profits caused by the absence of premium products in the marketplace (*see* July 25 SNOPR at 38827). Therefore, DOE believes the Department of Justice's views on the potential of the standards in the January 22 final rule to accelerate consolidation in the industry should have been obtained.

As part of its review of the January 22 final rule pursuant to the President's Regulatory Review Plan, DOE on March 20, 2001, requested the views of the Department of Justice on the 13 standards for central air conditioners and heat pumps. The Department of Justice's letter responding to our request is published in the Appendix to this notice. While some commenters were critical of the substance of the Department of Justice's determinations about the anti-competitive impact of 13 SEER standards (*see* Section VI below), none of the comments disputed DOE's view that it should have obtained the Department of Justice's views on 13 SEER standards for both central air conditioners and heat pumps.

A second legal error that DOE considered in deciding to propose withdrawal of the January 22 final rule was the absence of any discussion of cumulative regulatory burden in the

statement of basis and purpose for the January 22 final rule. One aspect of the assessment of manufacturer burden required by EPCA (42 U.S.C. 6295(o)(2)(B)(i)(I)) is the cumulative impact of multiple DOE standards and the regulatory actions of other Federal agencies and States that affect the manufacture of a covered product. The preamble to the January 22 final rule contained an assertion that DOE considered cumulative burdens, but it did not discuss the magnitude of the burden or how DOE took it into account in evaluating manufacturer impact (*see* 66 FR 7174). In light of the evidence of cumulative regulatory burdens on manufacturers documented in the TSD, DOE thinks the mere assertion that DOE considered the cumulative burdens on manufacturers was not an adequate statement of basis and purpose for DOE's determination on manufacturer impact resulting from a 13 SEER standard. *See* July 25 SNOPR at 38828.

Finally, as explained in DOE's analysis of EPCA's anti-backsliding provision, the effective date included in the January 22 final rule (*i.e.,* the date 30 days after the date of publication of the notice) was in direct conflict with the CRA requirement that a major rule may not take effect until the later of the date occurring 60 days after the date Congress receives the agency's report under 5 U.S.C. 801 or the date the rule is published in the **Federal Register**. 5 U.S.C. 801(a)(3)(A)).

B. Policy Issues

DOE also based its decision to propose withdrawal of the January 22 final rule and to propose 12 SEER standards on its review of the analysis of benefits and burdens that underpinned the January 22 determination that 13 SEER is the maximum efficiency level that is technologically feasible and economically justified. As a result of its review of the January 22 rule, DOE tentatively concluded that a 13 SEER standard was not economically justified, and therefore DOE proposed to withdraw the January 22 final rule and proposed to adopt a 12 SEER standard (66 FR 38828–29).

As explained in the July 25 SNOPR (66 FR 38828) DOE believed that in issuing the January 22 final rule, the previous Administration had given inadequate consideration to the fraction of consumers, and especially low income consumers, who would incur significant increases in life-cycle cost as a result of the 13 SEER standard. DOE decided to propose a 12 SEER standard, instead of 13 SEER, because the analysis showed it would result in a lower fraction of consumers who would incur significant life-cycle cost increases (25 percent and 34 percent of average and low income consumers, respectively, at 12 SEER versus 39 percent and 50 percent, respectively, at 13 SEER).

DOE also based its decision to propose the withdrawal of the January 22 final rule on its conclusion that DOE, in determining whether 13 SEER was economically justified, had not adequately assessed the potential regulatory burden and financial impacts on manufacturers of central air conditioners and heat pumps. *See* July 25 SNOPR at 38828–29. First, DOE concluded that the cumulative regulatory burden on manufacturers was not given sufficient weight in the determination of economic justification. As discussed previously, the statement of basis and purpose for the final rule did not explain how DOE considered the cumulative impact on manufacturers of the costs of complying with various new regulatory actions. DOE also concluded that inadequate consideration was given in the January 22 determination to the effect of 13 SEER standards on industry net cash flow and the maldistribution of regulatory burden on the two major types of manufacturers (66 FR 38829).

DOE's tentative conclusions in the July 25 SNOPR about the appropriate weight to give to the benefits and burdens of 13 SEER versus 12 SEER standards, and the resulting conclusion about which level is economically justified, were the subject of extensive public comment. These comments are discussed in Section VI of this Supplementary Information, and the analysis that supports DOE's determination that 12 SEER is the maximum efficiency level that is technologically feasible and economically justified is set forth in Section VII.

V. Amended Energy Conservation Standards

A. Overview

The amended standards in today's rule take into account a decade of technological advancements and will save consumers and the nation money, significant amounts of energy, and have substantial environmental and economic benefits. When they go into effect, the amended standards will raise the energy efficiency standards to 12 SEER for new central air conditioners and to 12 SEER/7.4 HSPF for new central air conditioning heat pumps. The standards will apply to products manufactured for sale in the United States, as of January 23, 2006. The standard for split-system air conditioners, the most common type of residential air conditioning equipment, represents a 20 percent improvement in energy efficiency. For split-system heat pumps, the new standard represents a 20 percent improvement in cooling efficiency and a 9 percent improvement in heating efficiency. The standard will increase the cooling efficiency of single-package air conditioners and single-package heat pumps by 24 percent and the heating efficiency of single-package heat pumps by 12 percent. DOE has determined that the new standards are the highest efficiency levels that are technologically feasible and economically justified as required by law.

DOE adopts somewhat lower amended standards for through-the-wall central air conditioner and heat pump products to ensure that more efficient versions remain available for this application. DOE establishes 10.9 SEER and 7.1 HSPF as the standard for through-the-wall split systems, and 10.6 SEER and 7.0 HSPF for through-the-wall single package systems.

Finally, DOE creates a new class for small duct, high velocity central air conditioners and heat pumps. These products are designed for retrofit applications and have special requirements that make it unlikely they can meet the efficiency standards that DOE today establishes for conventional equipment. As discussed in Section VI, DOE received public comments that supported creation of a separate class for these products. While DOE includes a definition of ''small duct, high velocity system'' in the final rule and creates a separate class for them, DOE retains the NAECA prescribed standard levels for small duct, high velocity products in today's final rule because DOE has not yet conducted the analysis required to determine whether higher levels are technologically feasible and economically justified. DOE in the near future intends to begin a rulemaking to determine if a higher standard is warranted.

Several aspects of today's standards warrant highlighting, as follows.

1. Central Air Conditioner and Heat Pump Features

The efficiency levels in today's final rule can be met by central air conditioner and heat pump designs that are already available in the market. DOE fully expects variations of these models to exist under the new standards, offering all the features and utility that are found in currently available products.

2. Consumer Benefits

Table 1 summarizes the ''characteristics'' of today's typical central air conditioners and heat pumps. Table 2 presents the implications for the average consumer of the standards becoming effective in 2006.

TABLE 1.—CHARACTERISTICS OF TODAY'S TYPICAL CENTRAL AIR CONDITIONERS AND HEAT PUMPS [1]

	Split system air conditioner	Split system heat pump	Single package air conditioner	Single package heat pump
Average Installed Price	$2,236	$3,668	$2,607	$3,599
Annual Utility Bill [2]	189	453	189	453
Life Expectancy	18.4 years	18.4 years	18.4 years	18.4 years
Energy Consumption per year	2,305 kWh	6,549 kWh	2,305 kWh	6,549 kWh

[1] ''Typical'' equipment have cooling and heating efficiencies of 10 SEER and 6.8 HSPF, respectively.
[2] Utility bill pertains to the energy cost of operating the air conditioner or heat pump.

TABLE 2.—IMPLICATIONS OF NEW STANDARDS FOR THE AVERAGE CONSUMER

	Split system air conditioner	Split system heat pump	Single package air conditioner	Single package heat pump
Year Standard Comes into Effect	2006	2006	2006	2006
New Average Installed Price	$2,449	$3,812	$2,765	$3,748
Estimated Price Increase	213	144	158	149
Annual Utility Bill Savings	31	50	31	50
Average Net Saving over Equipment Life	113	365	163	421
Energy Savings per Year	384 kWh	768 kWh	384 kWh	768 kWh

The most typical air conditioner (*i.e.*, split system air conditioner which comprises approximately 65 percent of today's central air conditioning and heat pump market) has an installed price of $2,236 and an annual utility costs of $189. In order to meet the 2006 standard, DOE estimates that the installed price of a typical air conditioner would be $2,449, an increase of $213.[5] This price increase would be offset by an annual energy savings of about $31 on the utility bills. The most typical heat pump (*i.e.,* split system heat pump) currently has an installed price of $3,668 and annual utility costs of $453. In order to meet the 2006 standard, DOE estimates that the installed price of a typical heat pump would be $3,812, an increase of $144.[6] This price increase would be offset by an annual energy savings of about $50 on the utility bills.

DOE recognizes that most consumers pay energy prices that are higher or lower than the ''typical'' consumer and operate their equipment more or less often. Consequently, DOE has investigated the effects of the different energy prices across the nation and different air-conditioning usage patterns. DOE estimates that 75 percent of all consumers purchasing a new typical air conditioner would either save money or would be negligibly impacted as a result of the 2006 standard.[7] In the case of a new typical heat pump, all consumers either would save money or be negligibly impacted.[8]

DOE also investigated how these standards might affect low income consumers. On average, DOE estimates that it is likely that low income air conditioner and heat pump consumers would also save money over the life of the equipment as a result of the standard.

3. National Benefits

The standards in today's rule will provide benefits to the nation. DOE estimates the standards will save approximately 3 quads of energy over 25 years (2006 through 2030). This is equivalent to all the energy consumed by nearly 17 million American households in a single year. In 2020, the standards will avoid the construction of three 400 megawatt coal-fired plants and nineteen 400 megawatt gas-fired plants. These energy savings would result in cumulative greenhouse gas emission reductions of approximately 24 million metric tons (Mt) of carbon, or an amount equal to that produced by approximately 2 million cars every year. Additionally, air pollution would be reduced by the elimination of approximately 80 thousand metric tons (kt) of nitrous oxides (NO_X) from 2006 through 2020. In total, DOE estimates this standard will have a net benefit to the nation's consumers of $2 billion over the period 2006 through 2030.[9]

B. Statutory Framework

Part B of Title III of EPCA provides for the Energy Conservation Program for Consumer Products other than Automobiles (42 U.S.C. 6291 *et seq.*). The consumer products subject to this program include central air conditioners and heat pumps. Under the Act, the program consists essentially of three parts: testing, labeling, and Federal energy conservation standards.

As previously stated, NAECA prescribed initial Federal energy conservation standards for central air conditioners and heat pumps (42 U.S.C. 6295(d)). NAECA further specified that DOE is to review and publish amended standards by January 1, 1994 (42 U.S.C. 6295(d)(3)(A)). Under EPCA, any new or amended standard must be designed so as to achieve the maximum improvement in energy efficiency that is technologically feasible and economically justified (42 U.S.C. 6295(o)(2)(A)).

Section 325(o)(2)(B)(i) provides that before DOE determines whether a standard is economically justified, it must first solicit comments on a

[5] Based on estimates supplied by the industry trade association, the Air-Conditioning and Refrigeration Institute (ARI), the installed price is estimated to be $2,510, an increase of $274.

[6] Based on estimates supplied by ARI, the installed price is estimated to be $3,933, an increase of $265.

[7] Based on estimates supplied by ARI, 61 percent of all consumers purchasing a new typical air conditioner will either save money or will be negligibly impacted as a result of the 2006 standard.

[8] Based on estimates supplied by ARI, 97 percent of all consumers purchasing a new typical heat pump will either save money or will be negligibly impacted as a result of the 2006 standard.

[9] Net benefit assumes NAECA efficiency scenario. Net benefit would be $3 billion for Roll-up efficiency scenario.

proposed standard (42 U.S.C. 6295(o)(2)(B)(i)). That section further provides that, after reviewing the comments, DOE must determine whether the benefits of the standard exceed its burdens, based, to the greatest extent practicable, on a weighing of the following seven factors:

(i) The economic impact of the standard on the manufacturers and on the consumers of the products subject to such standard;

(ii) The savings in operating costs throughout the estimated average life of the covered product in the type (or class) compared to any increase in the price of, or in the initial charges for, or maintenance expenses of, the covered products which are likely to result from the imposition of the standard;

(iii) The total projected amount of energy savings likely to result directly from the imposition of the standard;

(iv) Any lessening of the utility or the performance of the covered products likely to result from the imposition of the standard;

(v) The impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from the imposition of the standard;

(vi) The need for national energy conservation; and

(vii) Other factors the Secretary considers relevant.

In addition, section 325(o)(2)(B)(iii) establishes a rebuttable presumption of economic justification in instances where the Secretary determines that ''the additional cost to the consumer of purchasing a product complying with an energy conservation standard level will be less than three times the value of the energy * * * savings during the first year that the consumer will receive as a result of the standard, as calculated under the applicable test procedure * * * .'' (42 U.S.C. 6295(o)(2)(B)(iii)). The rebuttable presumption test is an alternative path to establishing economic justification.

C. Methodology Used in DOE Analyses

For this final rule, the methodologies used to evaluate the seven factors described above are unchanged from those used in the analyses that DOE relied on for the October 5 proposed rule and the January 22 final rule. DOE's methodology is discussed in the October 5, 2000 NOPR (65 FR 59594–97) and the January 22 final rule (66 FR 7173–74). Additionally, the TSD that accompanies this rulemaking provides a detailed description of every aspect of the various analytical methodologies used.

D. General Discussion of DOE's Consideration of Statutory Criteria

1. Technological Feasibility

Pursuant to section 325(p)(2) of EPCA, and as discussed in the October 5, 2000 NOPR (65 FR 59593, 59612) and January 22 final rule (66 FR 7172), DOE determined that 18 SEER is the maximum technologically feasible level (Max Tech Level) for cooling efficiency for all product classes and capacities covered by this rulemaking. The Max Tech Level for heating efficiency is 9.4 HSPF, which is the highest HSPF rating currently available in residential heat pumps. DOE's determinations of technological feasibility for central air conditioners and heat pumps have not been disputed in the written and oral comments of interested persons in the rulemaking.

2. Economic Justification Factors

DOE has considered the seven statutory factors for determining whether a conservation standard is economically justified. This section briefly summarizes DOE's consideration of these factors. More detailed consideration of these factors is provided in the discussion of comments in Section VI and the discussion of analytical results in Section VII of this Supplementary Information.

a. Economic Impact on Manufacturers and Consumers

The record for this rulemaking contains several discussions of the economic impact on manufacturers and consumers *See* 66 FR 7174–78, 7185–7191, and 66 FR 38828–29, 38834–35. In the July 25 SNOPR, DOE identified deficiencies in the assessment of manufacturer and consumer impacts that was the basis for adoption of the January 22 final rule. Later sections of this Supplementary Information address the public comments received and DOE's conclusions on these subjects.

b. Life-Cycle Costs and Rebuttable Presumption

DOE considered life-cycle costs, as discussed in the January 22 final rule. 66 FR 7173, 7175, 7187–90. DOE calculated the installed price and operation and maintenance costs for a range of consumers around the nation to estimate the range in life-cycle cost benefits that consumers would expect to receive due to new standards. DOE has made no change in its assumptions and analysis of life-cycle costs in making the determinations in today's notice of final rulemaking.

Section 325(o)(2)(B)(iii) of EPCA provides that if, according to the applicable test procedure, the increase in initial price of an appliance due to a conservation standard would repay itself to the consumer in energy savings in less than three years, then DOE is to presume that such standard is economically justified. This presumption of economic justification can be rebutted upon a proper showing.

Using the reverse engineering manufacturing costs, the standards DOE adopts today for split heat pumps and packaged heat pumps can be shown to have satisfied the rebuttable presumption requirements in section 325(o)(2)(B)(iii).[10] Therefore, DOE presumes that the standards adopted for split system and single package heat pumps are economically justified. The analysis, however, shows that split system air conditioners and single package air conditioners do not meet the standard for use of the rebuttable presumption of economic justification. Therefore, DOE does not presume them to be economically justified. If the rebuttable presumption does not apply, DOE must perform additional analysis to determine economic justification. As discussed in Section VII, DOE has performed an analysis for all classes of central air conditioner and heat pump products that shows the standards in today's rule are indeed economically justified.

c. Energy Savings

EPCA requires DOE, in determining the economic justification of a standard, to consider the total projected energy savings that are expected to result directly from revised standards. DOE forecasted energy savings through the use of a national energy savings (NES) spreadsheet, as discussed in the October 5, 2000 NOPR (65 FR 59590, 59593). DOE relies on the same spreadsheets and assumptions for its estimate of the NES that would result from implementation of today's standards.

As discussed in the October 5, 2000 NOPR, section 325(o)(3)(B) of EPCA prohibits DOE from adopting a standard for a product if that standard would not result in ''significant'' energy savings. The energy savings for the standard levels DOE is adopting today are non-trivial—indeed they are substantial—and therefore we consider them ''significant'' within the meaning of

[10] To avoid confusion, DOE points out that the statute requires DOE to use ''the applicable test procedure'' to calculate the payback periods for purposes of the rebuttable presumption. As explained in the October 5, 2000 NOPR (65 FR 59596), the annual cooling and heating energy consumption calculations based on DOE's test procedure are significantly greater than the weighted-average values from DOE's life-cycle cost analyses based on the 1997 Residential Energy Consumption Survey, used in other DOE analyses. For this reason, the payback periods presented in Section VII of this portion of the preamble, entitled ''Analytical Results and Conclusions,'' are significantly longer than those calculated to determine whether the rebuttable presumption applies to these products.

section 325 of the Act as construed by the court in *Natural Resources Defense Council* v. *Herrington*, 768 F.2d 1355 (D.C. Cir. 1985).

d. Lessening of Utility or Performance of Products

This factor cannot be quantified. In establishing classes of products, DOE has attempted to eliminate any degradation of utility or performance in the products covered by today's rule. Attributes that affect utility include the product's ability to cool and dehumidify. In some applications, noise levels may also be an aspect of utility. Product size or configuration can also be considered utility if a change in size would cause the consumer to install the product in a location or in a manner inconsistent with the consumer's preferences. The separate treatment of through-the-wall products and small duct, high velocity systems in today's rule is based in part on utility and performance considerations.

e. Impact of Lessening of Competition

This economic justification factor has two aspects: On the one hand, it assumes that there could be some lessening of competition as a result of standards; on the other hand, it directs the Attorney General to gauge the impact, if any, of that effect and DOE must consider the Attorney General's views in determining whether an efficiency level is economically justified.

In order to assist the Attorney General in making such a determination, DOE provided the Attorney General with copies of the October 5, 2000, NOPR and the TSD for review. The Attorney General's determination, in a letter dated December 4, 2000, was discussed in the preamble to the January 22 final rule. 66 FR 7176, 7199–200. The Attorney General's December 4, 2000, determination is included in the Appendix to this notice of final rulemaking.

During the review conducted pursuant to the President's Regulatory Review Plan, DOE invited the Attorney General to submit supplemental views on the January 22 final rule. The Department of Justice, in a letter dated April 5, 2001, provided comments on whether the final rule effectively removed its concerns regarding possible lessening of competition that could result from the October 5 proposed standards. The Department of Justice's April 5, 2001, letter is also included in the Appendix to this notice. The Department of Justice concluded that the 13 SEER standards for heat pumps and air conditioners in the January 22 final rule still presented anti-competitive concerns. More specifically, the Department of Justice concluded that while the final rule's exclusion of niche products might alleviate competitive problems for manufacturers of those products, the Department of Justice remained concerned about the impact of the final rule on manufacturers of standard equipment who could not make 13 SEER equipment that would fit into space-constrained sites. The Department of Justice also concluded the January 22 final rule would have a disproportionate impact on smaller manufacturers of heat pumps. Finally, the Department of Justice was of the view that the 13 SEER standard for air conditioners presents the same kinds of anti-competitive problems as the 13 SEER standard for heat pumps, and urged DOE to adopt a 12 SEER standard for all products covered by the rule.

DOE submitted the July 25, 2001, supplemental proposed rule to the Department of Justice for comment. The Assistant Attorney General, Antitrust Division, responded in a letter dated October 19, 2001, (*see* Appendix to this notice) that the Department of Justice had concluded that the proposed 12 SEER standards would not adversely affect competition. This factor is discussed further in Section VI.E of this Supplementary Information.

f. Need of the Nation To Conserve Energy

DOE recognizes that energy conservation benefits the nation in several important ways. Enhanced energy efficiency improves the nation's energy security, strengthens the economy, and reduces the environmental impacts of energy production. As part of the analysis supporting today's rule, DOE estimated energy savings and the national consumer benefits and estimated reduction in emissions of pollutants and greenhouse gases resulting from those energy savings. *See* the October 5, 2000 NOPR for a qualitative discussion of how these standards affect energy savings and those benefits. 65 FR 59622–3. The amount of energy savings ultimately associated with a particular standard level is also affected by the effect of a given standard on competition and consumer cost. Selecting a standard level should take into account manufacturer—and therefore inevitably consumer—costs, in order to encourage robust competition and heightened introduction of newer, more efficient units into the inventory of units available for purchase and use by consumers.

g. Other Factors

Section 325(o) of EPCA allows the Secretary of Energy, in determining whether a standard is economically justified, to consider any other factors that the Secretary deems to be relevant (42 U.S.C. 6295(o)(2)(B)(i)(VI)). Under this provision, DOE considered the potential improvement to the reliability of the electrical system and health effects caused by foregone air conditioner purchases. These issues are discussed in the October 5, 2000 NOPR (65 FR 59605); the January 22 final rule (66 FR 7195); and in the Discussion of Comments that follows. The Utility Impacts Analysis in Chapter 11 of the TSD describes the technical analysis used in estimating the effects of adopting new efficiency standards on installed generation capacity. As will be described in the Discussion of Comments, the Utility Impacts Analysis has been revised. Updated results are provided in Appendix M of the TSD.

VI. Discussion of Comments

A. Impact on Consumers

The record for this rulemaking includes numerous discussions of the distributions, extent, and type of burdens on the typical consumer as well as on low-income consumers. *See* 65 FR 59623–59624, 66 FR 7189–7190, and 66 FR 38834. In the January 22 notice of final rulemaking, DOE determined that most consumers, including low-income consumers, would likely benefit financially over the life of the equipment, but that all consumers would bear higher initial costs, and many consumers, though not the majority, would never recover the higher first costs in the form of savings in their utility bills. However, the previous Administration concluded that the national energy savings and the slight financial benefit to the typical consumer overrode any negative and maldistributed consumer impacts. Upon review undertaken in conjunction with President Bush's Regulatory Review Plan, DOE focused on analytical results showing that the benefits of the standards adopted in the January 22 final rule would accrue to a much smaller fraction of consumers, particularly low-income consumers, than is the case for recent standards for other products. Therefore, DOE sought to mitigate those burdens by proposing on July 25 a 12 SEER standard, which would reduce the increase in equipment cost compared to the 13 SEER requirements issued on January 22. *See* July 25 SNOPR, 66 FR 38828, 38834. DOE received extensive public

comments on this subject in response to the July 25 SNOPR.

1. Low-Income Consumers

As stated in the July 25 SNOPR, DOE is particularly concerned that new standards be designed to distribute their burdens and benefits as fairly as practical. Although some disparity is expected in any national standard, the disparity in impacts between low-income and typical consumers is of greater concern at more stringent efficiency standards because increases in first cost and increases in life cycle costs are felt more sharply by lower income consumers.

Many advocates of a 13 SEER standard argued that because a majority of low-income central air conditioner and heat pump consumers are renters, most would not bear the first cost increases associated with more efficient equipment. These comments asserted that landlords would have to absorb any first cost increase because rental prices are dictated by housing availability, real estate prices, and a number of other market forces as opposed to first cost increases in any single appliance. The comments also asserted that because landlords typically purchase the least expensive, and in turn, the least efficient equipment, stringent efficiency standards are one of the few options provided to renters to protect them from unduly high energy bills. (ACEEE, No. 284 at p. 3; Appliance Standards Awareness Project (ASAP), No. 244 at pp. 1–2; Austin Energy, No. 243 at p. 2; Consumer Federation of America (CFA), No. 246 at p. 2; NEEP, No. 273 at p. 3; State of Vermont, No. 268 at p. 3; Goodman Global Holdings (Goodman), No. 269 at p. 4; ASE, No. 282 at p. 4; California Energy Commission (CEC), No. 263 at p. 2; NRDC, No. 250 at pp. 17–18; Environmental Ministries of Southern California, No. 263 at p. 4; Texas Ratepayers' Organization to Save Energy (Texas ROSE), No. 241–SS at pp. 15–16; National Consumer Law Center (NCLC), No. 241–NN at p. 1; Texas Natural Resource Conservation Commission (TNRCC), No. 286 at pp. 1–2; American Geothermal DX, No. 241–HH at p. 1; EPA, No. 276 at p. 5). Goodman, Oregon Office of Energy (OOE), National Grid, and Texas ROSE stated that low-income consumers in general would benefit from stringent efficiency standards. Goodman argued that any first cost increase would be made up through lower energy bills, while Texas ROSE asserted that the stringency of the efficiency standard is immaterial as most low-income households would find buying a new central air conditioning unit a prohibitive expense at any efficiency level. (OOE, No. 275 at pp. 4–5; Goodman, No. 269 at p. 4; National Grid, No. 241–OO at p. 2; Texas ROSE, No. 241–SS at pp. 12–16).

Countering the above comments, York International (York), Trane Company and American Standard Heating and Air Conditioning (Trane), Southern Company, ARI, Edison Electric Institute (EEI), Rheem Manufacturing (Rheem), Carrier Corporation (Carrier), and George Mason University Mercatus Center (Mercatus Center) all argued that the increased cost of more efficient air-conditioning equipment cannot be afforded by those consumers living on fixed or low incomes. For those low-income consumers that are elderly or of ill-health, Carrier and Mercatus Center stated that the increased first cost associated with more efficient equipment could cause these consumers to forego the purchase of new equipment leading to potential adverse health effects for this sub-population. With regard to low-income renters, both Trane and Southern Company maintained that landlords will pass on the higher first costs associated with more efficient equipment to renters. Southern Company elaborated by stating the ''renters get it free'' argument only has validity in the very short-term. In the long term, higher costs experienced by landlords will inevitably result in higher costs to their tenants. Southern Company asserts that DOE would be better served looking at cost-effectiveness from a direct-cost, societal viewpoint, and avoid speculating on changes in landlord profit margins decades from now. (York, No. 270 at pp. 2–3; Trane, No. 262 at pp. 4–5; Southern Company, No. 257 at p. 2; ARI, No. 259 at p. 2; EEI, No. 253 at p. 4; Rheem, No. 248 at p. 2; Carrier, No. 280 at p. 2; Mercatus Center, No. 242 at p. 11).

DOE believes roughly half of low income households are renters. The 1997 Residential Energy Consumption Survey (RECS) that was used as the basis for determining the impacts of increased efficiency standards on households estimates that 49.8 percent of low-income households with central air-conditioners or heat pumps are renters. What is at issue is the extent to which increased equipment costs will be borne by occupants of these households or by the building owners.

DOE examined existing literature on the economics of rental markets to determine whether any previous analyses might help resolve the disagreements on this issue.[11] The literature provides expressions for determining the renter and landlord pass-through-fractions as a function of elasticities for long-run housing supply and demand. The renter pass-through-fraction defines that portion of a landlord's investment cost (such as the cost associated with more efficient air-conditioning equipment) that gets passed through to the renter in the form of an increased rental price. The renter pass-through-fraction is defined by the following expression:

Where,

$$\text{Pass-thru-Fraction}_{\text{Renter}} = \frac{e_s}{e_s - e_d}$$

e_s = elasticity of long-run housing supply and

e_d = elasticity of long-run housing demand.

The landlord pass-through-fraction defines that portion of a renter's benefit due to a landlord's investment (such as utility bill savings associated with more efficient air-conditioning equipment) that get passed back through to the landlord in the form of an increased rental price. The landlord pass-through-fraction is defined by the following expression:

$$\text{Pass-thru-Fraction}_{\text{Landlord}} = \frac{-e_d}{e_s - e_d}$$

The existing literature provides a range of elasticities for long-run housing supply (0.3 to 0.7) and demand (-0.1 to -1.0). The literature suggests that there will always be some form of renter pass-though but not necessarily some form of landlord pass-through. As a result, the minimum and maximum pass-through-fractions are 23 percent and 121 percent, respectively, of a landlord's investment cost. As shown above, the literature suggests that it is possible that some landlords will not be able to pass on all investment costs, while other landlords may actually pass on more than 100 percent of these costs. Those landlords who are unable to pass on all of these added costs will, of course, be adversely affected by this rulemaking (unless they are directly responsible for the utility bills associated with air conditioning use), although their renters are much more likely to benefit. Landlords that would be adversely

[11] Pindykck, R. and D. Rubinfeld, Microeconomic Theory, 2001, provides equations for renter and landlord pass-through fractions as a function of elasticities for long-run housing supply and demand. Typical supply elasticities can be found in Pindykck, R. and D. Rubinfeld, Microeconomics, 2001, Prentice Hall (citing de Leeuw, F. and N. Ekanen, ''The Supply of Rental Housing'', AER, Vol. 61, 1971, pp. 806–817). Typical demand elasticities can be found in Hanushek, E.A. and J.M. Quigley, ''The Determinants of Housing Demand'', Research in Urban Economics, Vol. 2, 1982, pp. 221–242.

affected may be more likely to seek alternatives, such as small capacity units or even delayed replacement of failed units. Those landlords that pass on more than 100 percent of the costs of new equipment could benefit from efficiency standards, but their renters are much more likely to be adversely affected. Since no study could be found that addressed the specific population of renters likely to be affected by this rulemaking, DOE believes there is insufficient basis to change its analytical methods or conclusions regarding the likely effects of central air conditioner and heat pump standards on low-income renters.

2. Electricity Prices

In proposing a 12 SEER standard in the July 25 SNOPR, DOE stated that a lower fraction of consumers would be negatively impacted in terms of life-cycle cost than under a 13 SEER standard. *See* 66 FR 28828.

Several comments disagreed with DOE's life-cycle cost conclusions, claiming that DOE's analysis significantly underestimates the benefits of the 13 SEER rule due to its failure to account for recent increases in electricity prices. The comments note that DOE based its seasonal price forecasts on electricity price data from 1996–97 that were adjusted downward using Energy Information Administration (EIA) projections of future annual electricity prices. Citing recent residential rate data from areas of the country that have undergone some form of electricity deregulation (e.g., Massachusetts, California, and the Northwest), the comments assert that DOE's electricity cost projections fail to recognize the significant summertime consumer price increases that are accompanying restructuring of the electric utility industry. For additional support, some comments refer to an analysis conducted by Synapse Energy Economics that demonstrated that summer daytime wholesale electric prices across the country averaged approximately 2½ ¢/kWh (kilowatt-hour) more than annual average wholesale prices. These comments conclude that if DOE's analysis were revised to include more recent electricity prices, the results would indicate that a 13 SEER standard represents a better choice for consumers and the Nation. (ACEEE, No. 284 at pp. 8–11; CFA, No. 246 at p. 2; Attorneys General of New York and Massachusetts, No. 277 at pp. 15–16; OOE, No. 275 at p. 3; Pacific Gas & Electric Company (PG&E), No. 274 at pp. 1–2; ASE, No. 282 at p. 4; Goodman, No. 269 at p. 2; National Rural Electric Cooperative Association (NRECA), No. 278 at pp. 1–2; Environmental Ministries of Southern California, No. 236 at pp. 2–3; Texas ROSE, No. 241–SS at pp. 7–8; NCLC, No. 255 at pp. 2–4; Northwest Power Planning Council (NWPPC), No. 287 at pp. 1–3; Environmental Protection Agency (EPA), No. 276 at p. 4). Some comments further argue that the costs of electricity price increases due to air-conditioning are passed, in the form of higher rates, onto all consumers for all end uses, regardless of the importance of their role in creating the price increase. Thus, DOE's analysis should account for how lower air-conditioning consumption lowers electricity bills for all consumers and not only those that utilize air conditioners. (NEEP, No. 273 at pp. 2–3; NRDC, No. 250 at pp. 14–17).

Trane, ARI, and EEI all disagree that recent price increases due to electricity deregulation will lead to higher electricity rates in the long-term. For example, Trane asserts that competition will cause energy prices to consumers to remain stable. EEI adds that price collapses have recently occurred in some of the same regional markets which experienced rate increases. EEI also states that retail price caps have been instituted in many areas of the country that have been deregulated in order to shield residential consumers from the price fluctuations in the wholesale market. (Trane, No. 262 at pp. 14–16; ARI, No. 259 at pp. 33–34; EEI, No. 253 at p. 3).

Rather than speculate on how current volatility in energy markets will impact future electricity prices, DOE has consistently relied on EIA energy price forecasts and has used other forecasts, including the various EIA scenarios, to bound the energy prices used in the standards analysis. EIA's most recent Annual Energy Outlook (AEO) for the year 2002 recognizes that over the past year energy markets have been extremely volatile.[12] Recent energy market volatility as well as the economic slowdown and lower prices following the September 2001 terrorists' attacks in the United States have been incorporated in the short-term projections of the AEO2002. To be more specific regarding the AEO2002 assumptions, its projections assume a transition to full competitive pricing of electricity in States with specific deregulation plans. Other States are assumed to continue cost-of-service pricing. Price projections include the contracts entered into by California to guarantee electricity supplies in the State. Increased competition in electricity markets is also represented through changes in the financial structure of the industry and efficiency and operating improvement. The impact of EIA's assumptions are evidenced from the average residential electricity price estimated by AEO2002 for the year 2001. The average rate estimated by AEO2002 for 2001 is 4.2 percent greater (or 0.3 ¢/kWh) than that estimated by the AEO2000. Although the AEO2002 short-term projections have taken into account recent events, EIA estimates that long-term volatility in energy markets will not occur from recent events or from the impacts of such future events as supply disruptions or severe weather. Again, this is evidenced from the average residential electricity price forecasts from the AEO2002. Starting in the year 2003 average rates are projected to drop below those forecasted by the AEO2000 and remain that way until 2010. After 2010 the rates forecasted by both the AEO2002 and AEO2000 are essentially the same. In terms of the consumer analysis, this means that the life-cycle results based on the AEO2000 price projections would remain virtually unchanged if the AEO2002 projections were to be substituted in their place.

With regard to Synapse Energy Economics' wholesale electricity price analysis, DOE does recognize that wholesale summertime electricity prices are on average 2½ ¢/kWh greater than average wholesale rates. But as was stated in the January 22 final rule, DOE cannot speculate as to how wholesale prices will be translated into retail prices to residential consumers. It is possible that this difference in wholesale rates will ultimately result in higher marginal energy prices for the operation of central air conditioners. However, several other assumptions about future electricity prices are equally reasonable. It is possible that increased competition will result in higher fixed charges for utility service and higher fixed charges would lower marginal rates. That is, under competition, utilities may recover more of their costs of supplying electricity to consumers from fixed charges on utility bills, thereby reducing the cost consumers have to pay for electricity being supplied at the margin. It is also possible that higher peak load prices for electricity would cause consumers to significantly alter the times at which they use air conditioning, thus reducing projected electricity costs (and cost savings). Finally, it is possible that the

[12] U.S. Department of Energy-Energy Information Administration (EIA), Early Release of the Annual Energy Outlook 2002. EIA website: <http:www.eia.doe.gov/oiaf/aeo/>.

recent trend toward increased retail level competition will slow or even stop. DOE recognizes that the Nation's electric utility systems are in the midst of major regulatory, structural and technological changes which are likely to have important effects on the marginal prices for electricity use that are charged to residential customers and that these effects may be particularly pronounced during periods of especially high (or low) electricity demand. However, given the many possible scenarios affecting the costs of operating central air conditioners, DOE has decided to retain for this rulemaking the existing method for estimating future marginal electricity prices. This analysis method utilizes the most current, comprehensive data available on the actual marginal rates paid by consumers and uses price forecasts that closely parallel the most current assessment published by DOE.

During the coming years, DOE intends to monitor carefully the actual changes in the marginal electricity rates being paid by consumers and other electricity users, and to look for any trends in these changes that could help improve DOE's analysis. For future efficiency standards rulemakings, DOE intends to use the most recent data available on marginal rates, considering emerging trends in such rates that result from significant changes in electricity rate design (such as fixed and variable charges, or time-of-use rates), metering and demand management technologies, equipment use load shapes, or in the allocations of costs among sectors.

Within approximately five years of the current rulemaking, DOE expects to complete another review of the efficiency standards for central air conditioners and heat pumps. During this period DOE hopes that sufficient data will become available to enable it to forecast with greater confidence the marginal rates for residential electricity users. If available, DOE expects to use such rates to support modified standards.

3. Installation Costs

The potential increase in installation costs associated with 13 SEER equipment was cited by DOE as one of the reasons for not proposing a 13 SEER standard in its July 25 SNOPR. *See* 66 FR 38836. Several comments disagreed with DOE's conclusion that installation costs could be significantly different between 12 and 13 SEER equipment. Goodman claims that because their 12 and 13 SEER equipment are similar in size, there is almost no difference in the installation costs associated with their 12 and 13 SEER systems. (Goodman, No. 269 at p. 3). American Geothermal DX, an HVAC contractor, asserts that, based on its experience, any cost difference between installing a 13 SEER unit over a 12 SEER unit would be minimal. (American Geothermal DX, No. 241–HH at pp. 1–2). Several other comments, in particular those from ACEEE, assert that DOE's treatment of the ''footprint'' issue is speculative, *i.e.,* DOE provides no evidence that installation costs will actually increase for 13 SEER equipment. With regard to space-constrained equipment, ACEEE adds that because DOE has already moved to isolate this type of equipment as separate product classes, it effectively dismisses any arguments asserting that the impact of space constraints would result in higher installation costs for ''mainstream'' 13 SEER equipment. (ACEEE, No. 284 at pp. 13–14; ASE, No. 282 at p. 5; NRDC, No. 250 at p. 23; National Grid, No. 241–OO at p. 2).

Trane, ARI, and Rheem all argue that 13 SEER equipment is significantly larger than 12 SEER systems. As a result, installation costs are significantly greater for 13 SEER units than for 12 SEER units. In particular, they state there will be many instances where it will be very difficult to physically fit larger indoor coils, needed to match outdoor 13 SEER condensing units, without retrofitting the air handler originally designed for a smaller, lower SEER indoor coil. (ARI, No. 259 at pp. 25–26; Trane, No. 262 at pp. 5–9; Rheem, No. 248 at p. 3).

Throughout the analysis DOE has assumed that installation costs would remain constant as efficiency increased. As stated in the January 22 final rule, DOE believes that even if installation costs do generally rise as the size and weight of equipment increases, manufacturers will have the incentive under new standards to reduce the size of 13 SEER equipment using various approaches, such as adopting variable speed and modulating capacity technologies, converting to microchannel heat exchangers, increasing the size of the unconstrained outdoor unit or indoor unit only, or changing the footprint or elevation of the unit. *See* January 22 final rule, 66 FR 7180. Although DOE still maintains that installation costs generally are unlikely to increase due to the above reason, as stated in the July 25 SNOPR, there is the possibility that substantial increases in installation costs due to larger and heavier 13 SEER systems may materialize for some consumers, especially for those replacing 10 SEER systems. *See* July 25 SNOPR, 66 FR 38836. As a result, DOE continues to believe the possibility of increased installation costs is a factor that supports adopting the less costly 12 SEER standard.

4. Manufactured Housing Owners

York, ARI, and Nordyne Inc. (Nordyne) stated that consumers living in manufactured homes are especially vulnerable to the increased first costs associated with more efficient equipment. They asserted that manufactured homes are typically ''starter'' homes for low-to-middle income families where any increases in household expenses, including those associated with more efficient space-conditioning equipment, are difficult to afford. Because the life-cycle cost analysis made no explicit mention of this sub-population, they are concerned that DOE did not consider manufactured-home owners in its analysis. (York, No. 270 at pp. 2–3; ARI, No. 259 at p. 9; Nordyne, No. 264 at pp. 1–2).

DOE considered all household types utilizing central air conditioners or heat pumps in its consumer life-cycle cost analysis, including manufactured homes. Of the households with central air conditioners analyzed in the consumer life-cycle analysis, 4.5 percent were manufactured homes. For households with heat pumps, 6.1 percent were manufactured homes.

In its decision to propose 12 SEER standards for conventional products, DOE took into consideration the first cost impacts of higher efficiency standards to manufactured home owners. In particular, DOE was concerned that the 13 SEER standards issued in the January 22 final rule could cause manufactured home consumers to shift from heat pumps to other systems that include resistance heat systems. *See* July 25 SNOPR, 66 FR 38836.

B. Life-Cycle Cost and Payback Period

Although a majority of the comments concerning consumer impacts addressed either low-income impacts or the effect that electricity prices have on the number of consumers either benefitting or being burdened by increased standards, several comments expressed concerns over other elements of the consumer life-cycle cost analysis.

1. Product Lifetime

Energy Market & Policy Analysis, Inc. (EMPA) stated that DOE incorrectly used estimates of the full lifetime of the equipment rather than the time that the equipment may remain in the ownership and use of the initial owner. (EMPA, No. 241–LL at pp. 5–6).

In analyzing increases in efficiency standards, DOE is required by section

325(o)(2)(B)(i) of EPCA to use the full lifetime of the equipment for establishing the operating cost savings resulting from higher efficiency standards. The second factor in section 325 to be considered for determining whether the benefits of the standard exceed its burdens is ''the savings in operating costs throughout the estimated average life of the covered product in the type (or class) compared to any increase in the price of, or in the initial charges for, or maintenance expenses of, the covered products which are likely to result from the imposition of the standard.'' 42 U.S.C, 6295(o)(2)(B)(i)(II).

A retirement function with an average 18.4-year equipment lifetime was used in the life-cycle cost analysis for central air conditioners and heat pumps. As stated in the January 22 final rule, the basis of the 18.4-year equipment lifetime was a survey conducted on more than 2,100 heat pumps in a seven state region of the U.S.[13] *See* 66 FR 7179–7180.

The survey determined not only the lifetime of a complete heat pump system, but the life of the original compressor as well. Although the system lifetime is on average over 18 years, the survey also showed that the original compressor lifetime was, on average, 14 years. Thus, the survey indicated that essentially all heat pump owners replaced their original compressor once in the lifetime of system.

Since the heat pump survey clearly indicates that the original compressor is replaced once in a system's life, DOE's analysis was based on the inclusion of a repair cost for the compressor. Conducting the analysis in this manner retains the average system lifetime of 18.4 years but explicitly addresses the replacement cost of the compressor, which is the most expensive component of a system. As indicated by the survey data, the compressor was assumed to be replaced in the 14th year of the system's life. Although a shorter equipment lifetime is possible, DOE has not been provided with more substantive data to support discontinuing its use of the above mentioned survey data. DOE believes that the survey data provides an accurate representation of central air conditioner and heat pump life. Although the survey was conducted only on heat pumps, the retirement function was also used as the basis for estimating central air conditioner product lifetime. Because heat pumps are used during both the cooling and heating seasons, they generally incur more operating hours and more wear during the course of a year than air conditioners. Thus, the use of a heat pump retirement function for air conditioners likely underestimates their lifetime. Although heat pump and air conditioner lifetimes likely differ, DOE was unable to obtain any well substantiated data to determine whether air conditioner lifetimes are longer than those for heat pumps. Without such data, the heat pump retirement function was assumed valid for air conditioners.

2. Warranty, Maintenance, and Service Costs

EMPA stated that DOE made no attempt to collect or include warranty, maintenance, and service costs in the consumer analysis. (EMPA, No. 241–LL at pp. 5–6). On the issue of warranty costs, Mercatus Center adds that the reliability patterns of new components that are part of high efficiency products are less known, so warranty accruals may be significantly higher for these products (*i.e.,* 12 to 13 SEER equipment). (Mercatus Center, No. 242 at p. 8).

With regard to maintenance and service (or repair) costs, DOE did collect data or make reasonable assumptions to establish both types of costs.

Maintenance costs are costs to the consumer of maintaining equipment operation such as checking and maintaining refrigerant charge levels and cleaning heat exchanger coils. For the life-cycle cost analysis, maintenance costs were based on data from Service Experts, an HVAC service company. *See* TSD, Chapter 5. Maintenance costs were assumed not to change with increased efficiency, the rationale being that the general maintenance of more efficient products would not be impacted by the more sophisticated components that they contain.

Service or repair costs are costs to the consumer for replacing or repairing components which have failed. For baseline equipment (*i.e.,* 10 SEER) and equipment with efficiencies greater than 13 SEER, annualized repair costs were assumed to equal one-half the equipment price divided by the average lifetime (18.4 years). Equipment with efficiencies of 11 through 13 SEER were assumed to incur a one percent increase in repair cost over the baseline level. Because systems with efficiencies up to and including 13 SEER generally do not include sophisticated electronic components, repair costs were assumed to remain essentially flat from 10 to 13 SEER. As noted above in the discussion of equipment lifetime, compressor replacement costs were also included in the analysis.

With regard to warranty costs, these costs were essentially considered by incorporating repair costs into the analysis. As noted above, a product that is less reliable or contains more expensive components was assumed to have a higher cost of repair over its lifetime. As stated in the October 5, 2000 NOPR, either the consumer or the warranty provider will bear that added cost directly through more frequent service calls or higher repair costs. *See* 65 FR 59599–59600. If the cost is covered by warranty, however, the warranty provider passes it back to future warranty holders in the form of slightly higher warranty prices. DOE believes the incremental increase in the price of the warranty is equal to, or just slightly higher, than the discounted present value of the incremental repair costs over the life of the warranty. Over the long term then, the average consumer always incurs higher repair costs, either directly or through higher warranty prices. Since the life-cycle cost analysis considers the present value of consumer life cycle costs on the average consumer, incremental repair costs and incremental warranty costs are the same, and interchangeable.

3. Markups

ARI, Trane, and York all believe that DOE greatly underestimated the manufacturer, distributor, and contractor markups used to derive consumer purchase prices. ARI maintains that the manufacturer markup should be approximately 1.35, as verified by a survey ARI conducted in the fall of 2000. Furthermore, ARI continues to believe that the distributor and contractor markups should be approximately 1.37, as determined by DOE in the 1999 Supplemental Advance Notice of Proposed Rulemaking (SANOPR). (ARI, No. 259 at pp. 23–25; Trane, No. 262 at pp. 10–11; York, No. 270 at p. 3).

As stated in the January 22 final rule, DOE did assume for the Manufacturer Impact Analysis that markups increase with increasing efficiency under a given standard level. However, for the consumer economic analyses, as the minimum standard level increases, DOE determined that the distributor and contractor markups on more efficient products do decrease. *See* January 22 final rule, 66 FR 7180.

DOE's analysis of distributor cost data revealed a measurable difference between the average aggregate markup on the entire set of direct business costs and the incremental markup on only

[13] Bucher, M.E., Grastataro, C.M., and Coleman, W.R. ''Heat Pump Life and Compressor Longevity in Diverse Climates.'' ASHRAE Transactions, 1990. 96(1): pp. 1567–1571.

direct equipment costs. In other words, for an incremental increase in the cost of the equipment, the markup required to cover the incremental cost increase is distinctly different than the average markup required to cover all business costs. The average aggregate distributor markup was determined to be 1.36 and is assumed to cover the direct business costs that are present at the current baseline (*i.e.,* 10 SEER) level. Note that the average aggregate distributor markup of 1.36 is approximately equal to the value used in DOE's analysis for the SANOPR. The incremental distributor markup was determined to be 1.11 and is assumed to cover incremental equipment cost increases, such as those associated with increases in equipment efficiency.

DOE's analysis of contractor cost data revealed a significant difference between the markup required for covering labor and equipment expenses and the markup required for covering only equipment expenses. The markup covering all business expenses was determined to be 1.53 while the markup for only equipment expenses was determined to have a mean value of 1.27. The 1.53 markup value covering all business expenses is approximately equal to the value used in DOE's analysis for the SANOPR. Because the life-cycle cost analysis breaks out the contractor's installation cost (*i.e.,* the cost to install the equipment) from the cost which is charged for the equipment, only the markup value of 1.27 is applicable for marking up the equipment. As with the distributor markup, a contractor markup associated only with an incremental increase in equipment cost was also determined. Since the incremental markup was shown to be close to the average value of 1.27, only the average markup value was used in the analysis.

As a result of determining lower distributor and contractor markups on incremental equipment cost increases, such as those associated with more efficient equipment, the overall markups decrease as efficiency increases. Although comments argued that overall distributor and contractor markups should not decrease, no data was offered to counter DOE's approach. Thus, DOE has retained its methodology for estimating both distributor and contractor markups. Appendix D of the TSD provides more detailed information on this issue.

4. Energy Use

a. Residential Energy Consumption Survey

EMPA asserted that DOE violated well-established statistical principles by basing the proposed standards on small subsets of data from EIA's Residential Energy Consumption Survey (RECS). As a result, EMPA concludes that DOE simply has no reasonable claim of validity for either the calculations or its analytical conclusions. (EMPA, No. 241–LL at pp. 2–4).

As stated in the January 22 final rule, as part of the process to improve the energy efficiency standards analysis, DOE is committed to use of sensitivity analysis tools to evaluate the potential distribution of impacts among different subgroups of consumers. DOE believes that RECS provides a nationally representative household data set which is suited for conducting the type of sensitivity analyses suggested by the Process Improvement Rule. Limiting the RECS households to those equipped with either central air conditioners or heat pumps, the life-cycle cost analysis performs a household-by-household analysis that predicts the percentage of households that will incur net life-cycle cost savings or costs from an increased efficiency standard. *See* January 22 final rule, 66 FR 7178–7179.

b. Rebound Effect

Mercatus Center alludes to what it termed the ''rebound effect'' when stating that more efficient air-conditioning due to higher SEER standards would cause consumers to use their equipment more often, thereby negating some of the energy savings realized from the more efficient equipment. (Mercatus Center, No. 242 at pp. 9–10). Assumed under the rebound effect is that consumers will use more efficient equipment more often because of the greater utility bill savings they will realize relative to less efficient equipment.

Although DOE recognizes that consumers may utilize more efficient equipment more often, the LCC analysis did not attempt to account for the possible reduction in energy savings due to a rebound effect. As a result, the LCC impacts detailed in today's final rule may overestimate actual consumer cost and energy savings that result from an increase in the minimum energy efficiency standards for central air conditioners and heat pumps.

5. Rebuttable Payback Period

NWPPC asserts that 13 SEER, at least for split system heat pumps, is economically justified. NWPPC states the DOE has not justified why it should not adopt the HSPF 7.7 and SEER 13 standards for split system heat pumps since this level of efficiency satisfies the ''rebuttable presumption'' requirements of the law. (NWPPC, No. 287 at p. 3).

As noted in the July 25 SNOPR, DOE recognizes some standard levels for some product classes satisfy the rebuttable presumption requirements in section 325(o)(2)(B)(iii). But DOE points out that the statute requires DOE to use ''the applicable test procedure'' to calculate the payback periods for purposes of the rebuttable presumption. As explained in the October 5, 2000 NOPR, the annual cooling and heating energy consumption calculations based on DOE's test procedure are significantly greater than the weighted-average values from DOE's life-cycle cost analyses based on the 1997 Residential Energy Consumption Survey, used in other DOE analyses, including evaluation of consumer impacts. 65 FR 59596. For this reason, the payback periods presented in Section VII of this portion of the preamble, entitled ''Analytical Results and Conclusions,'' are significantly longer than those calculated to determine whether the rebuttable presumption applies to these products. More importantly, DOE's economic justification analysis for a particular class of covered product involves consideration of factors other than the payback period. For example, as discussed in the July 25 SNOPR (66 FR 38837), one reason DOE did not propose Trial Standard Level 3 (12 SEER for air conditioners and 13 SEER for heat pumps) was the potential of those standards to cause heat pump owners to switch to resistance heating, and possibly adversely affect competition.

C. Shipments/National Energy Savings

1. Shipments Forecasts

Mercatus Center asserts that DOE's shipment model does not account for the reduced equipment sales that occur when consumers forego purchases due to the increased equipment prices resulting from higher efficiency standards. As a result of delayed consumer purchases, the energy savings to the nation would build up more slowly than forecasted by DOE. (Mercatus Center, No. 245 at p. 5). This is effectively an argument that the price elasticity for the air conditioner and heat pump market should be higher than what was assumed.

DOE has used historical saturation trends to establish price elasticities for the overall air conditioner and heat pump market. Higher saturation levels

are assumed to decrease price elasticity, which makes sales volume less sensitive to price increases. Over the past twenty years household saturation levels of central air-conditioning have increased, primarily due to the steady increase in real household incomes. In order to capture the effect that increased equipment price and household income have on equipment sales, the shipments model breaks the air conditioner market into the following segments: New construction, early (discretionary) replacements, regular replacements, extra repairs, and remodels. In the new construction market, the price of air conditioning has dropped over time relative to household income resulting in a corresponding increase in saturation to its current value of approximately 80 percent. Because of the high saturation in the new construction market, the purchase price elasticity for the new housing market is small relative to the early replacement market. But although the price elasticity is small, a decrease in shipments to the new construction market will still be likely when equipment prices increase (as we expect to occur under a new efficiency standard). As a result, for the case of a 13 SEER standard for split system air conditioners for example, shipments to the new construction market drop by approximately 3 percent. For comparison purposes, shipments to the early replacement market drop much more significantly (approximately 15 percent) as this market is far less saturated and the resulting purchase price is much more elastic. With regard to the other market segments, the regular replacement and extra repair market price elasticities are dependent on the age of the equipment in addition to price. Thus, the price elasticity for a relatively new air conditioner is much more elastic than that for a relatively old air conditioner. With regard to the remodel market (otherwise known as the market of stock homes without air-conditioning), historical data reveals that a relatively low number of non-air conditioned households purchase new air-conditioning equipment. Thus, like the early replacement market, the remodel market's price elasticity is relatively sensitive to first cost increases.

Because the price elasticities in the shipments model are based on actual historical data, DOE has retained the price elasticities developed for the central air conditioner and heat pump standards analysis.

2. Heat Rates

ACEEE asserts that DOE has severely underestimated the national energy savings resulting from more efficient standards due to the marginal heat rates which were used to convert electrical energy savings at the site (*i.e.,* at the household or commercial building) into fuel savings at the source (*i.e.,* at the power plant). ACEEE contends that the value assumed by DOE in 2018 and beyond (5519 Btu/kWh) is well below the heat rate estimates provided by EIA (e.g., 9617 Btu/kWh in 2020). Using the EIA heat rate estimate would lead to about a 2-fold increase in energy savings and reduction in pollution for 2020, with progressively smaller differences earlier. (ACEEE, No. 284 at pp. 9–10).

The standards analysis has used marginal heat rates calculated by using a version of EIA's National Energy Modeling System (NEMS–BRS) [14] to translate end use electricity savings to primary energy savings. The marginal heat rate is calculated by imposing a load reduction to the appliance end-use being analyzed in NEMS–BRS and observing the change in primary energy use. As noted by ACEEE, the marginal heat rates used in the central air-conditioning analysis are lower than expected. One would expect the central air-conditioning marginal heat rate to be higher than those of more base load appliances (like clothes washers or electric water heaters) because this peak-use appliance displaces more expensive, less efficient generation. Further, this marginal displaced plant should be not unlike the inefficient plant in place today because most rapid technological change occurs in the base load. The key to understanding this apparent paradox is that this conversion rate does not represent a specific marginal generator or combination of generators, but is actually a conversion factor that incorporates several simulated effects resulting from the standard.

The primary reason as to why the marginal heat rate is lower than expected is that the overall rate of efficiency improvement of the power system with the standard in place is slower than estimated by EIA in the AEO Reference Case. While there are many effects of the standard, DOE's analysis shows the two major components of the standard's impact on the power sector are: (1) The direct reduction in fuel burned in power plants and (2) the indirect effect whereby the slowing of electricity demand growth slows new investment, thereby impeding the rate of overall improvement in power sector efficiency. While this latter effect would seem to be trivial relative to the first, it grows significantly over time because fewer and fewer of more efficient generating plants are added to the power system. By the end of the forecast period, this effect becomes a significant drag on the primary energy savings of the standard, which explains why the marginal heat rate is less than that attributed to new technology. Further, it is a bigger drag on the benefits of peaking end-use efficiency improvements. These reduce peak demand more and slow investment more because the rate of new construction is heavily dependent on growth in peak demand. A more detailed discussion of this effect can be found in Appendix M of the TSD.

3. Fuel Switching

As discussed in the July 25 SNOPR, potential equipment switching from heat pumps to electric resistance heating due to high heat pump prices was cited as one of the reasons for not proposing a 13 SEER standard. The energy savings resulting from 13 SEER heat pumps would be eliminated if only a small fraction of heat pump owners (4 percent) switched to electric resistance heating. *See* July 25 SNOPR, 66 FR 38836.

ACEEE, NRDC, and NWPPC all disagreed that more efficient heat pump standards would cause consumers to switch to electric resistance heating. Both ACEEE and NRDC stated that if equipment switching was truly a concern, DOE should prevent such action not by lowering heat pump efficiency standards, but by promoting revisions to building energy codes to minimize the use of resistive heat. (ACEEE, No. 284 at p. 14; NRDC, No. 250 at pp. 18–20). ACEEE adds that DOE failed to account for the impact that electric resistance heating has on consumer energy bills (nearly doubling average annual heating bills) in their assessment of the potential of equipment switching. NWPPC claims that DOE overstated the potential of equipment switching if split system heat pump SEER standards were set higher than those for split system air conditioners. NWPPC states that the price difference between a heat pump and an air conditioner at the same SEER level is already very high (approximately $1400). The extra price associated with a more efficient heat pump (approximately $150 between 13

[14] EIA approves use of the name *NEMS* to describe only an AEO version of the model without any modification to code or data. Because our analysis entails some minor code modifications and the model is run under various policy scenarios that deviate from AEO assumptions, the name NEMS–BRS refers to the model as used here. For more information on NEMS, please refer to the National Energy Modelling System: An Overview 1998. DOE/EIA–0581 (98), February 1998. BRS is DOE's Office of Building Research and Standards.

and 12 SEER) is not enough to alter consumer purchase decisions. (NWPPC, No. 287 at p. 3).

York agrees with DOE that there is potential for equipment switching if the standards for heat pumps are set too high. York states that the higher price associated with more efficient heat pumps would force consumers to choose either resistance heat and the resulting higher utility bills, or fossil fuel furnaces that may have to operate on higher cost fuels with more volatile prices such as oil or propane. (York, No. 270 at pp. 3–4).

As stated in the January 22 final rule, a significant number of households use electric resistance heat, indicating the potential for equipment switching from heat pumps to resistance heat. *See* 66 FR 7180. Based on data from the 1997 RECS, a little over 14 percent of households with room or central air conditioning have either baseboard or forced air electric resistance heating compared to almost 10 percent of households which have heat pumps. The fact that such a large percentage of households currently use a combination of central or room air-conditioning with resistance heat to meet their space-conditioning needs supports DOE's view that there is a real possibility that some purchasers would choose to switch to resistance heat from heat pumps rather than pay the consumer prices associated with 13 SEER heat pumps. DOE has not attempted to estimate the number of consumers that might actually switch from heat pumps to resistance heating. Rather, DOE has determined that a mere 4 percent of heat pump households would need to switch to central air conditioners and electric resistance heating to negate the energy savings achieved from increasing the heat pump standard from 12 SEER/7.4 HSPF to 13 SEER/7.7 HSPF. Because such a small fraction of heat pump owners would need to switch to electric resistance heating to negate the energy savings realized from 13 SEER heat pumps, DOE believes the possibility of equipment switching is real enough to warrant its inclusion as a factor supporting a 12 SEER/7.4 HSPF standard.

D. Impact on Manufacturers

1. Cumulative Regulatory Burden

DOE considers that a standard level is not economically justified if it contributes to an unacceptable cumulative regulatory burden. The TSD contains information on cumulative regulatory burden (section 8.6 of the TSD), although as previously discussed, DOE did not explain how it considered this information in promulgating the 13 SEER standard on January 22, 2001. The TSD shows that the burden on manufacturers due to all other recent or imminent Federal regulations exceeds $479 million. DOE estimates the 13 SEER amendments to the standards for central air conditioners and heat pumps would contribute up to an additional $303 million in manufacturer costs, bringing the total cumulative regulatory burden to as high as $782 million. In light of that heavy burden, the July 25 SNOPR proposed 12 SEER standards that DOE estimates will reduce the expected financial burden on manufacturers from all new Federal and State regulations by $144 million compared to the 13 SEER final rule of January 22.

ACEEE, NRDC, and EPA all argued that DOE overestimated the impacts to the industry due to cumulative regulatory burden. EPA focused on the impacts due to the phase out of HCFC–22 (the hydrochlorofluorocarbon used as a refrigerant) and cited its own analysis as well as an estimate from Goodman Manufacturing to claim that DOE's estimate of $50 million per company is at least twice as high as warranted based on prior industry transitions and more recent trends. Referring to the costs incurred by the refrigerator industry in the mid-1980's to convert from CFCs to HCFCs, EPA suggests that a more reasonable estimate to phase out HCFC–22 is $20 to $30 million per company. EPA also cites Goodman's estimate that the combined cost of meeting a 13 SEER standard and transitioning from HCFC–22 is approximately $25 million per company, half of DOE's $50 million estimate for just converting to a new refrigerant. (EPA, No. 276 at pp. 2–4).

Because the industry has known for well over a decade of the impending phase out of HCFC–22, both ACEEE and NRDC claim that the costs for converting to a new refrigerant should be lower than DOE's estimate. ACEEE states that DOE seems to treat the costs of redesign for efficiency and redesign for refrigerants as additive, as though manufacturers would first redesign for efficiency (2006) and then for replacement refrigerants (2010). ACEEE believes this assumption would be demonstrably false as there is every reason to accomplish the two goals with a single re-engineering effort, both saving capital and improving time-to-market. ACEEE adds that since there is already fairly widespread use of an alternative refrigerant, R–410A, this strongly suggests that component manufacturers of compressors, coils, valves, lubricants, and all other critical components are already geared up and supplying the manufacturers with the necessary pieces to assemble non-HCFC-based heat pumps and air conditioners. With regard to the costs to be incurred by the industry to comply with Clean Air Act amendments for coating large appliances, ACEEE asserts that much more data are needed before any definitive estimates can be made. (ACEEE, No. 284 at pp. 11–13; NRDC, No. 250 at pp. 13–14).

Counter to the above arguments, ARI states that DOE is correct to give greater weight to cumulative burden. ARI asserts that the cost impacts due to cumulative regulatory burdens will exceed DOE's estimate of $479 million. ARI notes that various additional burdens to the industry were not quantified by DOE including: (1) Recently revised DOE efficiency standards for room air conditioners; (2) on-going DOE review of possible new minimum efficiency standards for residential furnaces; (3) DOE's adoption of standard levels related to ASHRAE 90.1–1999 (American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., Standard 90.1 as revised in October 1999); (4) EPA's Metal Products and Machinery (MP&M) effluent guidelines and standards; and (5) EPA's allowance system for controlling production, import, and export of HCFCs. ARI states that DOE's own estimate that a 12 SEER standard would have $144 million less cumulative burden than a 13 SEER standard warrants adoption of a 12 SEER standard. (ARI, No. 259 at pp. 10–13).

In reaching its conclusion on manufacturer impacts, DOE considered the cumulative regulatory cost imposed on air conditioner manufacturers under the various standards scenarios, including manufacturers' investment to meet the new standard. As noted above, DOE estimated the cumulative regulatory impacts on manufacturers to likely exceed $782 million if a 13 SEER standard were adopted. This includes the $303 million reduction in industry value due to a 13 SEER standard and $479 million in other regulatory burdens, including costs associated with the HCFC phase out. It does not include other major Federal and State regulations that we listed but did not quantify.

The comments submitted by ACEEE, NRDC, and, in particular, EPA do not address the cumulative manufacturer impacts. Rather, the comments were limited to manufacturer's investment required to transition away from HCFC refrigerant. DOE's estimated $50 million per company investment to comply with the HCFC phase out was based on

interviews with all seven major air conditioner manufacturers during 1998 and 1999 when the firms were asked specific questions regarding the costs of replacing HCFCs in their equipment. In contrast, ICF Consulting, in its analysis for the EPA, refers to mid-1980's estimated costs associated with phasing CFCs out of the refrigerator industry, without explaining the link between those costs estimates and ICF's estimated $20 to $30 million per company to phase HCFCs out of the air conditioner industry.

DOE believes that the cost to convert from CFC refrigerants used in residential refrigerators is substantially less than the cost to convert from HCFC–22 refrigerant used in central air conditioners and heat pumps. For example, compressor capacity and power input for central air conditioners and heat pumps is an order of magnitude larger than compressor capacity and power input needed for home refrigerators (2 to 5 horsepower for central air conditioners versus one-quarter horsepower for home refrigerators). For this reason alone, significantly higher conversion costs would be expected. Further, central air conditioner or heat pump components (compressors, coils and air handlers) comprise almost the entire product cost. In contrast, over 50 percent of the cost of a home refrigerator is embodied in such non-refrigerant components as the insulated cabinet, shelves and other storage components, and other accessories such as icemakers and through the door ice and drink dispensers.

DOE also believes refrigerant related design changes will result in greater impact on the overall product cost and competitive position for air conditioner manufacturers than will be the case for refrigerator manufacturers. Since HFC–410A refrigerant operates at substantially higher operating pressures than HCFC–22 refrigerant, a major system redesign is necessary with HFC–410A refrigerant to take advantage of the beneficial aspects of the 40 to 50 percent higher pressure and to minimize any deleterious effects. With the alternative replacement refrigerant HFC–407C, system efficiency is reduced by 5 to 10 percent compared to use of HCFC–22 refrigerant in the same system. Significant resizing and reconfiguring of components is required to restore efficiency levels.

Replacing CFC–12 refrigerant in refrigerators with HFC–134a refrigerant reduces system efficiency by only 1 to 2 percent, which is easily offset by higher the higher efficiency compressors available at the time of CFC to HFC conversion. In contrast, replacing air conditioner compressors, whose efficiencies are already close to thermodynamic limits, with higher efficiency units to offset the impact of refrigerant related efficiency loss is not a viable option. Finally, there are fewer models in a typical appliance manufacturer's refrigerator product line than the number of residential central air conditioner and heat pump models (multiple efficiency level products) produced by a typical unitary air conditioner manufacturer. As a result, significantly more redesign and product validation is necessary for the unitary air conditioner manufacturers to convert their product lines and production from R–22 to either of the HFC blends.

ACEEE states that the rational approach to meeting the two regulatory requirements—new efficiency levels in 2006 and the phase out of HCFCs in 2010—is to do so simultaneously, rather than sequentially, 3 to 4 years apart. If both changes could be accomplished simultaneously, the investment would indeed be less than the cost of making the two changes separately. Although the characteristics of the new refrigerant, with significantly higher operating pressures, will add to the scope and cost of the development effort for the increased efficiency product families, in principle, product validation testing and retooling would occur only once, saving substantial resources.

The difficulty with this scenario is the competitive reality of the industry. Competition in the U.S. air conditioning industry is especially vigorous, with seven major manufacturers competing for business. Consumers have benefitted significantly from this, with real (inflation adjusted) prices having fallen steadily over the past 20 years, even during periods of rapid market growth. In addition, this level of competition in the domestic industry has provided no opportunity for foreign competition to displace main line HVAC products, preserving traditional manufacturing jobs in the U.S.

In 2006, in this environment of vigorous competition, each manufacturer will be faced with the choice of producing a cost optimized product line using HCFC–22 refrigerant or of also making the additional investment to convert to an HFC refrigerant, combined with meeting the increased efficiency standard level. It is clear that either HFC blend (R–407C or R–410A) will result in increased product cost (at comparable efficiency and performance level). If HFC refrigerant use would result in lower cost compared to HCFC–22, it is likely that manufacturers would already have voluntarily converted. In fact, hardware cost increases are readily identifiable and the higher cost HFC refrigerant alone will add $20 to $30 to the direct manufacturing cost of each unit. Therefore, it is highly likely that one or more manufacturers will opt to use HCFC–22 in the majority of their product line between 2006 and 2009. In that situation, the resulting cost advantage will force the other manufacturers to follow suit to remain competitive and avoid market share loss. While most manufacturers produce 12 and 13 SEER HFC air conditioners, they are typically low volume products and the tooling for full scale mass production does not exist. To increase production of 12 SEER or 13 SEER units, manufacturers will need expanded tooling to produce those models. To obtain the least cost, manufacturers will need to use designs that are better optimized for mass production. Consequently, DOE believes that much of the redesign, validation, and retooling effort faced by the industry is likely to happen once for efficiency standards in 2006 and a second time for the HCFC phase out in 2010.

2. Financial Burdens Associated With New Efficiency Standards

As explained in the July 25 SNOPR (66 FR 38829), the 13 SEER standards in the January 22 final rule were projected by the TSD to result in a negative cash flow for the industry in the year preceding the new standards' enforcement. Moreover, DOE's analysis shows that 13 SEER standards would impose far greater financial burdens on manufacturers whose operating costs exceed the industry average. Those manufacturers typically engage in more research and development or provide additional sales or service support than do their lower operating cost competitors. Consequently, DOE proposed the 12 SEER standard to reduce the maldistribution of financial impacts on manufacturers and allow manufacturers to maintain a positive cash flow.

Trane concurred with DOE's action to reduce the maldistribution of financial impacts on manufacturers. Trane asserted that as efficiency is increased, a larger commodity market is created. This in turn reduces the market opportunities for companies that focus on value-added systems and services. Thus, the ''volume'' manufacturers (*i.e.,* lower operating cost manufacturers) benefit disproportionately. Trane also noted that under a 13 SEER standard, manufacturers who invest heavily in

research and development (R&D) would dedicate less funding to innovative programs, resulting in the entire industry focusing on the development of designs that address the absolute lowest commodity product. Trane's opinion was shared by Equipment Distributors. (Trane, No. 262 at pp. 2–4, 13–14; Equipment Distributors, Inc., No. 266 at p. 1).

NRDC disputed DOE's interpretation of the financial impacts to manufacturers by pointing out that DOE's own analysis undercuts the contention that the industry is impacted more severely under a 13 SEER standard. Referring to the TSD, NRDC notes that under two different scenarios (NAECA and Roll-up) lowering the standard from 13 to 12 SEER actually increases the burden to the industry (as measured by the industry net present value). (NRDC, No. 250 at pp. 20–22).

DOE disagrees with this comment. In its interpretation of manufacturer impacts, NRDC overlooks the important role that the efficiency mix assumptions play in the financial projections. In Section 8.4.8 of the TSD, we described the dynamics by which the profits of manufacturers with higher operating costs depend on the sale of premium products, and how those products are differentiable only at efficiency levels higher than the baseline. The closer the baseline unit is to the technological limit, the fewer consumers will ''buy up'' to a higher efficiency. For more and more consumers, the baseline will be the cost-effective option, and those consumers who wish to ''buy up'' will have fewer options and less financial incentive to do so. For these reasons, DOE assumed the Roll-up efficiency scenario to be the most probable for 13 SEER standard levels and the NAECA efficiency scenario most probable at 12 SEER standard levels. The resulting cumulative change in industry net present value (NPV) is negative $300 million at 13 SEER levels compared to negative $199 million at 12 SEER levels.

NRDC's interpretation of manufacturer impacts also overlooks short-run cash flow impacts of the standards. While NPV is useful for evaluating the long-term effects of new standards, short-term changes in cash flow are also important indicators of the industry's financial situation. The annual cash flow impacts at 13 SEER are $31 million more than at 12 SEER and turn the absolute cash flow negative. Depressed cash flow can strain the industry's access to capital or cause investors to flee.

OOE, Goodman, and ACEEE all claim that the industry impacts due to 13 SEER standards cannot be too severe as the technologies required to comply with the standard are conventional and well known. (OOE, No. 275 at p. 3; Goodman, No. 269 at p. 3; ACEEE, No. 284 at p. 7). Goodman specifically states that the only difference between a 10 SEER, 12 SEER, and 13 SEER units is a little more copper and aluminum used in manufacturing different sized coils.

DOE believes it is erroneous to conclude from the fact that technologies required to comply with standards are conventional and well known that it is a trivial exercise to increase production volumes to a level capable of satisfying the entire U.S. demand for air conditioners. Sales of 13 SEER equipment and higher are only 3 percent of all equipment sold and large investments would be required to convert all production to these levels. Furthermore, as previously described, much of the industry's financial health today depends on sales of 12 SEER equipment.

3. Small Manufacturers

The issue of how higher efficiency standards impact small manufacturers also drew several comments. The Department of Justice's April 5, 2001, letter to DOE regarding the potential effect on competition of new central air conditioner and heat pump efficiency standards stated that some small manufacturers would be disproportionately impacted under a 13 SEER standard, and noted that 100 percent of their current product line would fail to comply with the new efficiency requirement. The Department of Justice also stated that manufacturers of equipment for space-constrained installation sites (such as manufactured housing) would also be disproportionately impacted by a 13 SEER standard (DOJ, No. 285 printed in Appendix of this notice).

Goodman asserted that moving to a 13 SEER would not be a hardship to small manufacturers. Goodman claims that 13 SEER technology has been available to both large and small manufacturers for approximately 15 years. Goodman also points to the fact that Goettl Air Conditioning, a small manufacturer based in Arizona, supports the 13 SEER standard. (Goodman, No. 269 at p. 3). PG&E concurs with Goodman's statements. (PG&E, No. 274 at p. 4). NRDC asserts that higher efficiency standards encourage competition by shaking up the cozy arrangements that the bigger companies have drifted into, requiring manufacturers either to invest in building new components or to purchase new components from other suppliers. They claim that this provides smaller, nimble manufacturers an opportunity to unseat large but slow-adapting competitors. (NRDC, No. 250 at p. 31).

Both ARI and Rheem agree with the Department of Justice's statements regarding small manufacturers. Rheem states that small manufacturers will most likely not be able to afford the redesign and retooling of their equipment and manufacturing facilities to meet the 13 SEER standard. ARI quotes DOE's TSD in stating that ''small manufacturers engaged in the production of conventional equipment would find it difficult to overcome the financial and technical burdens associated with the transition, and could decide to exit the market.'' (ARI, No. 259 at pp. 10–11; Rheem, No. 248 at p. 3).

With regard to the manufacturers of equipment for the manufactured housing industry, both ARI and Goodman agree that products for markets like manufactured housing, where space constraints limit efficiency gains achieved with conventional technology, should be granted an exemption from higher efficiency standards. (ARI, No. 259 at p. 8; Goodman, No. 269 at p. 3).

The Department of Justice's concerns relate to disproportionate impacts on small manufacturers. Most small manufacturers produce only indoor coils or niche product lines. For small manufacturers who produce coils only, there are no intensive incremental technological or capital requirements for them to increase the efficiency of their products and DOE does not expect them to face any incremental burden as a result of the new standards. However, DOE has documented that manufacturers of niche air conditioning products, such as through-the-wall equipment and small duct, high velocity systems, face special technological and financial considerations compared to those faced by the major air conditioner producers. Consequently, new efficiency standards could be more detrimental to the financial situation of niche product manufacturers than of major manufacturers. Technical considerations are typically more important for certain niche manufacturers than for major manufacturers and have more severe consequences related to increased production costs or loss of sales volume due to increased price. Overall, if provisions were not made in the standard for niche products that face severe technological constraints, we would expect their impacts to be disproportionate to those on the industry as a whole. In today's rule, DOE is establishing separate product

classes for through-the-wall equipment and small duct, high velocity systems, which will be required to meet a lower SEER. DOE believes this meets the Department of Justice's concern regarding the impact of more stringent standards on small manufacturers.

DOE recognizes that products used for manufactured housing and modular housing also face space constraints. In its decision to propose 12 SEER standards for conventional products, DOE took into consideration the impacts of higher efficiency standards on the manufacturers of manufactured housing and modular housing products. For these applications, products at the 12 SEER level are currently on the market. DOE has concluded that, at the 12 SEER level, there is no need for a separate class for products used mainly in manufactured or modular housing.

4. Manufacturer Cost Estimates

Several comments asserted that DOE's manufacturing cost estimates derived from the reverse engineering analysis were too high. The comments stated that economies of scale in production and competitive forces will result in lower costs for the more efficient equipment as compared to pre-implementation estimates. (ACEEE, No. 284 at p. 2; CFA, No. 246 at p. 1; NCLC, No. 241–NN at p. 1). OOE specifically states that the cost of the commodity product at a minimum standard level cannot be appropriately characterized by looking at the mean or median manufacturer cost estimates from the reverse engineering analysis. (OOE, No. 275 at p. 3). Goodman states that their incremental cost for producing a 13 SEER unit is $100 and is comparable to DOE's estimate. (Goodman, No. 269 at pp. 3–4).

The reverse engineering analysis does in fact take into account economies of scale by considering larger production volumes for more efficient products after implementation of the new standards. In its production modeling, DOE also considered that manufacturers would cost-optimize their production at the new level because of more intense competition at that level. We expect this competitive pressure to drive manufacturing costs and this is illustrated by the results of the reverse engineering analysis which fall within the ARI range and nearer to the ARI minimum.

ARI, Trane, York, and EEI disagree with the above comments and assert that DOE's manufacturing cost estimates are too low. Trane states that the reverse engineering analysis was based on too small of a sample of units and eliminated units which fell out of the range of costs bounded by the manufacturers' submission. Trane nevertheless thinks that, despite its shortcomings, the reverse engineering analysis essentially confirmed cost levels submitted by ARI. However, Trane recommends that DOE utilize the cost data submitted by ARI. EEI concurs with this conclusion. (Trane, No. 262 at 9–10; EEI, No. 253 at p. 2). ARI states that it surveyed its manufacturer members after DOE issued its January 22 final rule. The results of the survey indicate that: (1) DOE has underestimated the baseline manufacturer costs by approximately 30 percent and (2) the additional cost of a 13 SEER split air conditioner over a 12 SEER is not $122 as estimated by DOE, but is at least approximately $305. ARI also refutes Goodman's claim that the amount of copper and aluminum needed for a 13 SEER unit is insignificant. In reviewing Goodman's current technical literature, ARI states that on average a Goodman 13 SEER split air conditioner weighs 44 pounds (18 percent) more than a 12 SEER system. More specifically, Goodman's 13 SEER condenser and evaporator coils are on average 20.2 percent and 11.5 percent heavier than the condenser and evaporator coils from their 12 SEER unit, respectively. (ARI, No. 259 at pp. 23–25). York states that the reverse engineering analysis is flawed because it focused on one size of equipment, a 3-ton unit and they believe that the whole range of equipment should have been analyzed, as size becomes much more problematic and costly at higher capacities. (York, No. 270 at p. 3).

DOE believes that the reverse engineering analysis is based on a sufficient equipment sample size to capture variability in design, manufacturing practices and costs across the range of products that would be subject to new standards. The equipment models were selected to be representative of the costs to manufacture existing baseline models and to capture the costs to manufacture products at potential new standards levels. To select representative equipment samples for the reverse engineering analysis, DOE requested that manufacturers identify equipment in their product lines most appropriate for this purpose. Four major manufacturers submitted design data for split cooling-only equipment, and three of those submitted design data for the other classes as well. This submission process yielded information on 62 models. DOE selected an additional nine models from catalogs of those and other manufacturers and also used the ARI Product Attribute Database and technical literature to describe the efficiency-related attributes of those products. Additionally, from the group of manufacturer submittals, three units were purchased for extensive disassembly and inspection. In their comment ARI does not explain how it derived baseline costs (estimation method, models included, product features, etc.), making an assessment or comparison to DOE's costs impossible. In contrast, the reverse engineering derivation method and resulting disaggregated baseline data are transparent and have been reviewed extensively by stakeholders.

Several comments also focused on the issue of productivity gains and asserted that these gains would lower manufacturing costs below the levels estimated by DOE. ACEEE, ASE, and OOE all refer to historic changes as shown by the U.S. Census Bureau's Current Industrial Reports series and state that air conditioner costs to the manufacturer have declined at a rate of 1.7 percent annually over the 1994–1998 period. They assert that DOE should include this rate of cost reductions in its analysis. They add that the Census figures are probably conservative as they ignore the fact that manufacturers tend to find ways to substantially increase productivity when standards take effect in order to reduce the impact of standards-induced cost increases. In making this claim, the comments cite DOE's cost estimates from the 1980's for meeting the 10 SEER standards that took effect in 1992. Rather than having any cost impacts, they assert that the 1992 standards resulted in essentially no change in product costs. (ACEEE, No. 284 at pp. 4–8; OOE, No. 275 at p. 3; ASE, No. 282 at pp. 3–4).

Although NRDC recognizes that the reverse engineering model accounts for economies of scale, it states that it does not account for any ''learning-curve'' effect. Thus, as cumulative production of high efficiency units increases, the reverse engineering model merely scales up the costs rather than factoring the downward effect that ''learning'' has on production costs. (NRDC, No. 250 at pp. 31–32). Goodman also alludes to the ''learning-curve'' when it states that when a unit meeting a new standard is produced in volume, it allows the manufacturer to run its plant more efficiently and pass the resulting cost savings on to the consumer. (Goodman, No. 269 at pp. 4–5). Trane, Rheem, and Lennox International, Inc. (Lennox)) all refute the contention that productivity gains will materialize. Trane asserts that earlier hard won productivity gains

were produced by the industry through untold millions spent on R&D. These expenditures reduced the cost to produce the entire product line, but did little to reduce the material-driven incremental costs of efficiency upgrades. Likewise, any cost reductions likely to occur in the next decade will have significantly greater impact on the overall consumer cost structure than on the cost and price increment between successively higher efficiency levels. Rheem states that under a 13 SEER standard only industry profits will be reduced, lessening the money available for research and design of new products to meet other upcoming standards, *i.e.,* HCFC phase-out, new commercial standards, new gas and oil furnace standards. (Trane, No. 262 at pp. 10–11; Rheem, No. 248 at p. 3; Lennox, No. 272 at p. 2).

DOE has not included unspecified productivity improvements or ''learning-curve'' cost reductions in its analysis. DOE does not believe historical price trends for unitary air conditioners, or other products, can be applied to forecast equipment costs where there are no data to indicate what factors resulted in the observed trends or that the trends will continue. Furthermore, without specific cost information, it is impossible to tell if productivity improvements would apply equally to baseline costs and standards induced incremental costs. Therefore, without specific data on the nature and magnitude of cost impacts, DOE will not apply a productivity improvement factor in this rulemaking or other rulemakings.

E. Effect on Competition

Several comments argued that DOE was unduly concerned that 13 SEER standards would lead to industry consolidation. NRDC claimed that the 13 SEER standards would actually enhance competition relative to the existing 10 SEER standards because economic losses imposed on higher-cost producers would force them to be more competitive. (NRDC, No. 250 at pp. 20–22). OOE adds that industry consolidation occurs regularly in all sectors of the economy. In the context of the various factors that influence industry consolidation, OOE asserts that it is unreasonable for DOE to claim that the incremental effects of efficiency standards can have any measurable effect on the industry. (OOE, No. 275 at pp. 3–4). PG&E cites third party coil manufacturers' response to PG&E's high efficiency rebate programs as support for the view that these small coil manufacturers can supply the efficiency combinations needed to meet new standards. By extension, PG&E asserts that 13 SEER standards would foster manufacturing diversity by providing the coil manufacturers more business. (PG&E, No. 274 at p. 3).

Countering the above claims, ARI, Trane, and the U.S. Small Business Administration (U.S. SBA) asserted that a 12 SEER standard would have less of an anti-competitive impact than the 13 SEER standard. (ARI, No. 259 at pp. 3–4, 25; Trane, No. 262 at pp. 2–4, 13–14; U.S. SBA, No. 234 at p. 1). Both ARI and Trane cited the Department of Justice's April 5, 2001 letter to DOE regarding the anti-competitive impacts of 13 SEER standards in claiming that the industry impacts due to 13 SEER standards are too severe. ARI additionally stated that DOE's failure to obtain a determination by the Attorney General of the anti-competitive impact of the 13 SEER standard prior to issuing the January 22 final rule is an appropriate basis to withdraw the 13 SEER decision. The Department of Justice (DOJ) submitted comments on DOE's July 25, 2001 SNOPR which concluded that the 12 SEER proposal would not adversely affect competition. (DOJ, No. 285 printed in the Appendix to this notice).

In establishing the new standards, DOE considered several factors which have a potential bearing on industry competition and consolidation. For each trial standard level DOE considered: Changes in manufacturer net present value; cumulative regulatory burden; and changes in annual cash flow. To further capture competitive effects, DOE considered differential impacts on three sub-groups of manufacturers, since higher efficiency standards will affect each group of manufacturers differently. ''Low Operating Cost Manufacturers'' observe a low cost, commodity-product strategy and achieve a higher operating profit margin on their baseline equipment. DOE's analysis indicates that this group of manufacturers will likely benefit from higher standards. ''High Operating Cost'' manufacturers typically place more of an emphasis on product differentiation than cost leadership. For this group of manufacturers, higher standards reduce opportunities for product differentiation and lower profitability. Finally ''Small Manufacturers'' fall into two groups; manufacturers of equipment for niche markets and manufactures of indoor coils and fancoil units. As previously stated in Section VI (D) (3), we do not expect coil manufacturers to face any incremental burden as a result of new standards. Also we stated that impacts on niche manufacturers have been largely addressed through the creation of separate product classes for products used in space contained applications.

In arriving at today's decision to adopt a 12 SEER standard, DOE relied on the Department of Justice's expert opinion that a 13 SEER air conditioner and heat pump standard raises competitive concerns (April 5, 2001 letter), and that a 12 SEER standard would not adversely affect competition (October 19, 2001 letter). DOE also factored into consideration the serious concerns regarding potential anti-competitive effects at higher trial standard levels presented in the TSD. DOE's analysis demonstrates that both High and Low Operating Cost Manufacturer groups would experience negative cash flows in the years leading up to the new standard under TSL3 and TSL4, but only the higher operating cost group is expected to suffer a long term decline in value, cash flow, and return on invested capital. Since Low Operating Cost Manufacturers would likely benefit from 13 SEER standards, most of the total financial burden due to the standards would need to be borne by High Operating Cost Manufacturers. The differential impact between the subgroups is $238 million at 12 SEER and rises to $429 million at 13 SEER. Due to this probable maldistribution of industry impacts at 13 SEER, DOE was particularly concerned that either accelerated industry consolidation (*i.e.,* less competitive market) or the stifling of innovation could occur.

F. Effect on Utility or Performance

1. Dehumidification

The only comments regarding product utility pertained to the impacts that more stringent standards may have on the ability of air-conditioning equipment to properly dehumidify. Both Southern Company and Mercatus Center claim that the lower latent cooling capacity inherent in larger, more efficient single speed equipment would result in dehumidification problems in humid climates. (Southern Company, No. 257 at pp. 3–4; Mercatus Center, No. 242 at p. 8).

As stated in the October 5, 2000 NOPR, ARI research has demonstrated for hundreds of systems that latent heat removal is not obviously impacted by increases in equipment efficiency at rated conditions (*i.e.,* 95°F outdoor temperature).[15] *See* 65 FR 59611–59612. Nonetheless, DOE recognizes the humidity control problems that exist in the southern region of the U.S. For the excessive humidity conditions commonly experienced in the South,

[15] D. Godwin. 1998. ''Latent Capacity of Unitary Equipment.'' ASHRAE Transactions 98(2).

the equipment may very likely not provide adequate dehumidification. Equipment efficiency should not be viewed as the sole source of the problem, however. Proper installation and maintenance practices also likely play a large role in the equipment's performance, as well as other factors, such as the duct system and the building shell characteristics. All these factors play a role in how a system dehumidifies. For these reasons, DOE does not believe the 12 SEER standard adopted today will have an appreciable effect on the performance of central air conditioners, and any problem with dehumidification can be dealt with in a variety of ways other than lowering the energy efficiency standard.

G. Electric System Reliability/Peak Power

1. Peak Power

As part of its analysis to determine the impacts of amended efficiency standards, DOE quantified how increased standards affected installed generation capacity, *i.e.,* reduction in electrical power demand. In response to DOE's proposal to withdraw the January 22 final rule, several comments expressed concern that the 12 SEER standard would have less of an impact on peak power demand than the 13 SEER standard. (Austin Energy, No. 243 at p. 1; State of Connecticut, No. 279 at p. 1; Attorneys General of New York and Massachusetts, No. 277 at pp. 15–16; New York State Energy Research and Development Authority (NYSERDA), No. 252 at p. 1; State of Vermont, No. 268 at p. 3; PG&E, No. 274 at p. 3; State of Nevada, No. 271 at p. 2; National Grid, No. 241–OO at p. 3).

Regardless of SEER level, ACEEE asserted that DOE significantly underestimated the peak demand impacts of more efficient air conditioners. Specifically, ACEEE states that DOE's model to estimate peak power impacts, NEMS–BRS, uses load shapes that underestimate the effect that residential central air conditioners have on peak power by a factor of more than two. To correct this problem, ACEEE recommends correcting NEMS–BRS with load shape data that is more nationally representative of central air conditioner power consumption. ACEEE specifically recommends load shape data that has a Conservation Load Factor (CLF) of 0.104. (ACEEE, No. 284 at pp. 8–11).

Both EEI and Southern Company assert that a 13 SEER standard could actually increase peak power demand. EEI states that for units rated at 13 SEER and higher, there is no correlation between SEER and EER.[16] So if the standard was raised to 13 SEER, EEI believes it is likely that the manufacturers would use technologies to raise SEER values and lower EER values, assuming it would lower their production costs. Thus, the higher SEER values could very easily lead to lower EER values, resulting in reduced energy savings in warmer climates, increased peak demands associated with residential systems in all climates, and increased need for peaking power plants. (EEI, No. 253 at pp. 2–3). Southern Company adds that the reduction in peak demand from higher efficiency standards is so long-term as to have no bearing on current problems. Thus, it is entirely possible that the higher efficiency levels could exacerbate a supply glut in the regions now experiencing shortages ten to fifteen years from now. (Southern Company, No. 257 at p. 3). Mercatus Center believes that higher SEER standards would cause more people to use their air conditioners more due to their lower operating costs. The result during a heat wave could increase overall air conditioning usage, increasing peak demand and the risk of a blackout, and leaving everyone without air conditioning. (Mercatus Center, No. 242 at pp. 9–10).

First, in response to the comments submitted by EEI and Southern Company, DOE has demonstrated in its technical analysis (*See* TSD, Chapter 4) that in the efficiency range of 10 to 13 SEER, the EER, on average, increases proportionally to the SEER. Thus, DOE maintains that higher standards of up through 13 SEER will yield progressively greater peak demand reductions. Mercatus Center's claims regarding increased equipment sales leading to higher overall air conditioner use are not substantiated. As presented earlier in the shipments forecasts discussion, due to higher consumer purchase prices, DOE's shipments model forecasts declining rather than increasing sales due to more efficient standards. Thus, DOE concludes that there is a very low probability that increased standards could actually lead to an increase in peak demand.

As stated in the January 22 final rule regarding peak demand impacts, DOE recognized that more research was needed to resolve the issue of whether NEMS–BRS accurately estimates the peak demand reductions resulting from air conditioner efficiency standards. *See* 66 FR 7182. To resolve this outstanding issue as well as address those comments submitted by ACEEE in response to the July 25 SNOPR, DOE conducted a comprehensive review of the end-use load shapes used by NEMS–BRS, not only for the residential sector, but for the commercial, industrial, and transportation sectors as well.[17] DOE discovered a number of problems associated with the specific load shapes. In the case of the residential air-conditioning end-use, DOE determined that a non-representative load shape was assigned to it. This non-representative load shape peaks in October and has a correspondingly high CLF. As discussed in the January 22 final rule, the CLF was first introduced by researchers at Lawrence Berkeley National Laboratory to allow for the straightforward calculation of the peak demand avoided from a given amount of energy savings.[18] The CLF is defined as:

$$\mathrm{CLF} = \frac{\text{Annual Site Energy Savings (kWh)}}{\text{Peak Load Savings (kW)} \cdot 8760 \text{ hours}}$$

Thus, a conservation technology that saves a constant amount of power on a continuous basis has a CLF of 1.0. Because air conditioning use occurs most often during times of peak demand, the CLF is significantly lower. The lower the CLF, the greater the amount of peak load savings achieved

[16] EER, Energy Efficiency Ratio, is a steady-state measure of energy efficiency which determines efficiency at a prescribed outdoor temperature (95°F), and is one of the test conditions in the DOE test procedure used to develop the SEER. EER is generally thought of as an efficiency descriptor that indicates the level of performance during periods when electricity use by air conditioners is at its peak.

[17] *Alternative Sectoral Load Shapes for NEMS,* Department of Energy-Energy Information Administration, Washington, D.C., August 2001.

[18] *Conservation Screening Curves to Compare Efficiency Investments to Power Plants: Applications to Commercial Sector Conservation Programs,* Lawrence Berkeley National Laboratory, Berkeley, CA, August 1990, published in the Proceedings of the 1990 ACEEE Summer Study on Energy Efficiency in Buildings, Authors: J. Koomey, A. Rosenfeld, and A. Gadgil.

for a given amount of annual energy savings. *See* 66 FR 7181.

As a result of discovering several problems with the load shapes within NEMS–BRS, an alternative set of sectoral end-use load shapes were assigned to the 2002 version of NEMS–BRS that were distinctly different than the load shapes used in prior versions of the model (including the 2000 and 2001 versions). For example, in the case of the residential air-conditioning end-use, the alternative version consists of thirteen regional load shapes based on regions defined by the North American Electric Reliability Council (NERC) as compared to the single national load shape used in prior versions. Depending on the region of the country, the thirteen air-conditioning load shapes have CLFs ranging from 0.063 to 0.183 and generally peak in either July or August. Although the alternative load shapes specific to the residential air-conditioning end-use are more representative (e.g., the loads peak during the summer months), switching to the entire set of alternative sectoral end-use load shapes results in smaller peak-to-average system loads. As a consequence, the overall built-up system load shapes using the alternative sectoral end-use load shapes have less pronounced peaks than those that are used in prior versions of NEMS–BRS. Because the built-up system loads within the 2002 version of NEMS–BRS have less pronounced peaks, the impact of reducing the energy use on a relatively peaky end-use like residential air-conditioning (such as through increased efficiency standards) will have less of an affect on overall system capacity.

New NEMS–BRS standard case runs were conducted with the entire set of alternative sectoral end-use load shapes, including the updated residential air-conditioning load shapes, to determine their impact on system capacity. These new runs were conducted with the 2000 version of NEMS–BRS by replacing the existing set of sectoral load shapes with the alternative versions. As expected, the installed generation capacity reductions based on the new NEMS–BRS runs are lower than those produced for the January 22 final rule. In the case of today's final rule, the installed generation capacity reduction is now estimated to be 8.7 GW as opposed to the 10.6 GW provided in the January 22 final rule. A complete set of updated installed generation capacity reduction impacts can be found in Appendix M of the TSD.

2. Reliability

As stated in the July 25 SNOPR, DOE has considered as a benefit the potential of the proposed standards to improve the reliability of the electric generation and distribution system by reducing the need for installed generation capacity. *See* July 25 SNOPR, 66 FR 38841.

Several comments, while not disputing DOE's conclusion that air conditioner standards would improve electric system reliability, argued that the potential for improving reliability would be reduced by going forward with the proposed standards (12 SEER) instead of those standards issued in the January 22 final rule (13 SEER). (ACEEE, No. 284 at p. 2; NRDC, No. 250 at p. 23; NEEP, No. 273 at p. 1; ASE, No. 282 at p. 2; CEC, No. 263 at p. 1; National Association of Regulatory Utility Commissioners (NARUC), No. 260 at p. 2).

Southern Company, which states that raising the standard from 12 to 13 SEER will have minimal effect on peak demand growth, believes this efficiency increase will have even less effect on reliability, because there is not a direct relationship between peak demand growth and reduced electric system reliability. The Southern Company claims that the reduction in peak demand from higher efficiency standards is so long-term as to have no bearing on current problems. It is entirely possible that the higher efficiency levels could exacerbate a supply glut in the regions now experiencing shortages ten to fifteen years from now. (Southern Company, No. 257 at p. 3). For different reasons, Mercatus Center also argues that higher efficiency standards would not improve and could possibly reduce electric system reliability. As stated in their arguments pertaining to peak demand impacts, they believe higher standards could lead to increased use of air-conditioning products due their lower operating costs. During periods of peak demand this could lead to an overall increase in air-conditioning. The resulting increase in peak demand heightens the risk of blackouts. (Mercatus Center, No. 242 at pp. 9–10).

DOE agrees with the assertion of the Southern Company that the primary effects of the proposed efficiency standards are so long term (more than 10 years in the future) that they are very unlikely to have any significant effect on electric system reliability. While DOE still believes that near term improvements in energy efficiency can help improve the reliability of systems that now have inadequate generating or transmission capacity (e.g., California), the primary effect of energy efficiency standards is likely beyond the long-term planning horizon of most electric systems. This means that long term electric system reliability is determined primarily by how well system planners (generators, utilities, regulators) anticipate future loads, not by how large those loads will be. In other words, planners in most areas of the country generally do not attempt to provide enough generating capacity to satisfy peak loads as the marginal cost for satisfying peak loads is generally cheaper using means other than the construction of large generating facilities (e.g., the use of relatively small ''peaker'' plants or the purchase of supply from outside the planning region). DOE knows of no analysis which has found a correlation between system load factor and system reliability over the long term. Nor is DOE aware of any analysis that found a correlation between the long term rate of growth of electricity demand and system reliability.

Higher efficiency standards for central air conditioners and heat pumps are expected to reduce significantly the peak loads of electric systems in the future, thus enabling a reduction in the number of new power plants and transmission lines required to meet future demand. Electric system planners will take these efficiency improvements and other factors affecting future electricity demand into account when estimating how many new plants and transmission lines will be required to meet future demand, while maintaining or improving system reliability. Long term system reliability will be determined by how accurately system planners anticipate electricity demand and whether they take steps to ensure the addition of sufficient electricity generating, transmission and distribution capacity to meet this expected demand, while maintaining adequate reserve margins. For example, EIA's Annual Energy Outlook 2001 forecast that the cumulative requirements for additional electricity generating capacity by 2020 might range from roughly 350 gigawatts, assuming a low rate of economic growth, to nearly 500 gigawatts, assuming a comparatively high rate of economic growth. This compares to a difference of approximately 4 gigawatts between the estimated effects on capacity requirements of a SEER 12 standard and those of a SEER 13 standard. The range of estimated requirements for additional electricity generating capacity that result from varying assumptions about the rate of change in end-use technology

(in all sectors) and the rate of economic growth is even greater.

H. Other Issues

1. Minimum EER Requirement

Several comments were in support of a minimum EER requirement to ensure more efficient operation at high outdoor temperatures during periods when electricity use by air conditioners is at its peak. (ACEEE, No. 284 at p. 3; Austin Energy, No. 243 at p. 1; PG&E, No. 274 at p. 1). NARUC passed a resolution in July, 2000, urging DOE to raise the standard by 30 percent (*i.e.*, to 13 SEER) with a minimum peak efficiency performance requirement. (NARUC, No. 260 at p. 2). NEEP also supports a standard of at least 13 SEER with a corresponding minimum EER of 11.6. (NEEP, No. 273 at p. 2). NRDC believes that DOE cannot set a standard at the highest level that is technologically feasible and economically justified if it does not include in that standard a minimum EER requirement. NRDC adds that this recommendation does not mean that EER would drop as SEER increases; it simply reflects NRDC's concern that EER might not rise as quickly without a separate regulation than it would with one. (NRDC, No. 250 at p. 32).

York and Southern Company are both opposed to a minimum EER requirement. York asserts that an EER standard could be counter-productive by discouraging variable speed and modulating equipment, which could save consumers substantial amounts of money over the cooling season. (York, No. 270 at p. 4). Southern Company believes that, regardless of cost-effectiveness, DOE does not possess regulatory authority to specify performance measures necessary to insure cost savings to consumers (SEER) and peak demand benefits to electricity suppliers (EER). (Southern Company, No. 257 at p. 4).

As stated in the January 22 final rule, DOE is still convinced that the stringent physical relationship between EER and SEER in equipment rated through the adopted standard of 12 SEER, which is comprised exclusively of non-modulating equipment, will remain intact for the foreseeable future. Thus, there is no strong need for a minimum EER requirement in addition to a minimum SEER standard. *See* January 22 final rule, 66 FR 7183.

With regard to the use of variable speed or modulating technologies, even if these technologies eventually predominate, and thereby reduce EERs in typical equipment, they would still reduce peak demand compared to today's 10 SEER baseline equipment. Furthermore, because variable speed and modulating equipment mitigate the cyclic losses that are due to widespread oversizing, the aggregated peak demand of a group of modulating air conditioners with lower EERs will likely be lower than that of a similar group of non-modulating air conditioners with higher EERs at the same SEER level. Also, utilities have the opportunity with modulating equipment to offer customers the option to allow the utility to ''lock'' the equipment into low-capacity operation in return for a lower electricity price.

Although DOE is interested in reducing peak demand, the primary purpose of appliance efficiency standards is to save energy. An EER standard could be counterproductive by discouraging variable speed and modulation, which can save substantial amounts of energy over the cooling season while providing consumers with additional benefits not found in single speed and non-modulating equipment.

Finally, although DOE believes that EPCA permits adoption of an EER standard, for the foregoing reasons, we do not believe that the Act requires or suggests that we establish such a standard under the circumstances here. Given the adopted standard levels, a national EER standard is both unnecessary and undesirable. Most benefits accruing from an EER standard will likely accrue from the SEER standards alone, without the associated burdens on manufacturers and the disincentives to apply energy-saving modulating technologies. Therefore, we have not adopted an EER standard in this rule.

2. TXV Requirement

ACEEE and PG&E were both in support of a prescriptive requirement for adaptive expansion devices such as thermostatic expansion valves (TXV). (ACEEE, No. 284 at p. 3; PG&E, No. 274 at p. 1). NEEP was more expansive on the topic by stating that the evidence in the record supports a TXV requirement. NEEP claims that TXVs provide additional efficiency benefits, over and above the benefits captured in the SEER rating procedure. They assert that central air conditioners with TXVs suffer lower efficiency degradation when a unit is improperly installed. The result is that TXVs can provide 12 percent energy savings over and above the energy savings associated with increasing SEERs. (NEEP, No. 273 at pp. 2, 4).

York agrees with DOE's decision in the both the January 22 final rule and the July 25 SNOPR not to impose a TXV requirement. York claims that imposing a TXV requirement in this rule would circumvent the test procedure. Also, it asserts that key data for evaluating the impacts of TXVs on system performance have not been thoroughly reviewed by all interested parties. (York, No. 270 at p. 4).

As stated in the January 22 final rule, a performance-based approach is also our preference and is certainly in the spirit of EPCA. *See* 66 FR 7183–7184. As such, the SEER test procedure, not a TXV requirement, appears to be the most appropriate vehicle for assuring that an equipment's efficiency rating is based on its performance characteristics. In fact, TXVs already receive credit in the test procedure because of their superior cyclic performance. DOE is not eager to circumvent the test procedure, particularly when the key data either are not available or have not been thoroughly reviewed by all interested parties. That said, DOE favors a SEER test procedure that fairly evaluates equipment performance under conditions that represent those encountered in the field. DOE prefers to encourage correct charging or proper airflow but recognizes that practical barriers exist. Although no immediate action will be taken to address field equipment performance in the test procedure currently under revision, attempts may be made in future test procedure revisions to evaluate whether the SEER test procedure can and should be amended to better reflect equipment performance under improper charge or airflow.

In sum, this rulemaking does not adopt a TXV requirement. Any alterations in the SEER test procedure further to encourage the use of TXVs may be undertaken in a separate rulemaking process after proposed revisions to the test procedure have been finalized. We also encourage parties interested in encouraging the broader application of TXVs to pursue other avenues. These include voluntary programs like Energy Star, tax incentives, and other State and local initiatives, which can all be tied to the presence of a device like a TXV. States also have the opportunity to apply to us for an exemption from preemption that would allow them to implement their own requirements based on their own unique circumstances.

3. State Exemption From DOE Standards

The Council of State Governments, Eastern Regional Conference (ERC) states that if DOE fails to implement a 13 SEER standard, then ERC member States will seek a waiver from the Federal standard and implement the

higher standard at the State level, as the States of California and Oregon are currently doing. ERC goes on to quote 42 U.S.C. 6297(d) ''Waiver of Federal Preemption'' where it states that ''Any state * * * which provides for any energy conservation standard for any type of covered product for which there is a Federal energy conservation standard * * * may file a petition with the Secretary (of Energy) requesting that such State regulation become effective with respect to such covered product.'' (ERC, No. 241–JJ at p. 1).

DOE will promptly act upon any petition for waiver that may be submitted by a State pursuant to section 327(d) of EPCA (42 U.S.C. 6297(d)). Section 327(d) provides that DOE must prescribe a rule granting a waiver from Federal preemption if the State establishes by a preponderance of the evidence that a State regulation is needed to meet ''unusual and compelling State or local energy or water interests,'' as that phrase is defined by the statute (42 U.S.C. 6297(d)(1)(B)). Section 327(d) further provides that DOE may not grant a waiver if interested persons establish by a preponderance of the evidence that the State regulation would significantly burden manufacturing, marketing, distribution, sale, or servicing of the covered product on a national basis (42 U.S.C. 6297(d)(3)). Finally, section 327(d) establishes the timetable and procedure that must be followed for acting upon petitions for waiver from Federal preemption.

4. Effective Date

DOE received written and oral comments with regard to DOE's proposed effective date (*i.e.*, the date when the covered products must comply with the new standards for the proposed amended standards contained in the July 25 SNOPR). In written comments, NRDC notes that the proposed effective date in the July 25 SNOPR is approximately six months later than that in the January 22 final rule, and claims that any delay in the effective date of new standards would reduce their benefits. NRDC adds that section 325(d) of EPCA (42 U.S.C. 6295(d)) does not require DOE to provide a five-year lead time for compliance by manufacturers after publication of a final rule. (NRDC, No. 250 at p. 34). TNRCC recommends that rather than making the proposed standards effective in 2006, DOE should accelerate the effective date of the standards from the year 2006 to 2004, thereby providing improved energy efficiency and resultant air quality benefits as soon as reasonably practicable. (TNRCC, No. 286 at p. 2). At the public hearing on the July 25 SNOPR, representatives of the California Energy Commission, PG&E, and Goodman also urged DOE to establish an earlier effective date if a 12 SEER standard was adopted. (Hearing Transcript, at pp. 142–144 and 164–165). In initial written comments, ARI stated a willingness to consent to the proposed 5-years-from-date-of-publication effective date for the proposed 12 SEER standard. (ARI, No. 259 at p. 36). In supplemental comments submitted after the close of the comment period, ARI responded to the comments that requested an earlier effective date by stating that ARI would accept a compliance date of January 23, 2006, the same effective date as provided in the January 22 final rule (ARI, No. 289). ARI stated that any agreement on its part to an earlier effective date should not be deemed as a precedent by DOE or concession by ARI with respect to future rulemaking proceedings.

Although section 325(d) of EPCA does not specifically state that initial amended standards become applicable to the manufacture of covered products after a certain number of years elapse following publication of a notice of final rulemaking, it provides a schedule of specific dates for the promulgation of a final rule and of specific dates on which an initial amended SEER and an initial amended HSPF established by a final rule would apply to the manufacture of new central air conditioners and new central air conditioning heat pumps. In the past, in circumstances where DOE was unable to publish a final rule by a deadline date established by a statute with scheduled compliance dates, DOE has had a practice of adjusting the statutorily scheduled date such a rule becomes enforceable to allow for the same amount of lead time as provided in the original statutory schedule. However, the application of this practice in any particular rulemaking is subject to public comment and to exceptions in special circumstances. *See,* e.g., 61 FR 10622, 10625 (March 14, 1996) (final rule establishing the Alternative Fuel Vehicle Acquisition Program with a compliance schedule that varied from the statutory schedule established by the Energy Policy Act of 1992 and that was subject to case-by-case exceptions). In this rulemaking, all interested persons who have an interest in the date that the final rule becomes enforceable—including representatives of all of the manufacturers who would have to comply with that rule—agree that the full amount of time between date of publication and the dates on which the rule applies in the statutory schedule is not needed for central air conditioner and central air conditioning heat pump manufacturers to come into compliance with a 12 SEER standard. Moreover, if, as a result of unforeseen circumstances, a particular manufacturer can show hardship, inequity, or unfair distributions of burdens, the standard would be subject to case-by-case exception pursuant to the authority of the DOE Office of Hearing and Appeals under section 504 of the DOE Organization Act (42 U.S.C. 7194), as implemented at subpart B of 10 CFR part 1003. On the basis of the foregoing, DOE has decided to fix January 23, 2006, as the date on which the amended standards set forth in today's final rule apply to the manufacture of central air conditioners and central air conditioning heat pumps.

5. Environmental Impacts

Several comments stated that there would be greater environmental benefits under a 13 SEER standard. (Goodman, No. 269 at p. 2; Austin Energy, No. 243 at p. 1; State of Connecticut, No. 279 at p. 2; State of Maine, No. 254 at pp. 1–2). The Attorneys General from the States of New York and Massachusetts asserted that DOE's assessment of environmental impact used the wrong ''no action'' scenario; in their view, the correct ''no action'' scenario or baseline for measuring impacts is the SEER 13 standard in the January 22 rule (Attorneys General of New York and Massachusetts, No. 277 at p. 11). In addition to the carbon and NO_X emissions, the Attorneys General state that coal-fired power plants are dominant sources of mercury and particulate pollution nationwide and that by ignoring these impacts of its SNOPR, DOE violated the National Environmental Policy Act (NEPA). (Attorneys General of New York and Massachusetts, No. 277 at pp. 14–15).

DOE disagrees with the comment that DOE failed to comply with NEPA in proposing 12 SEER standards in the July 25 SNOPR. As previously discussed, DOE does not believe the standards in the January 22 final rule constitute the baseline for assessing the impact of today's final rule because those standards never became effective. The correct baseline, and the one used for the ''no action'' alternative in the EA, are the currently effective NAECA standards.

DOE's environmental assessment (EA) examined the environmental impacts of all trial standard levels being considered. *See* Section VIII.A. of this

Supplementary Information. All of the alternatives considered in DOE's analysis were found to have beneficial environmental impacts compared to the ''no action'' alternative. Under the ''no-action'' or base case alternative, the minimum efficiency requirements would remain at their current levels: a cooling efficiency of 10 SEER for split system air conditioners and heat pumps, a cooling efficiency of 9.7 SEER for single package system air conditioners and heat pumps, a heating efficiency of 6.8 HSPF for split system heat pumps, and a heating efficiency of 6.6 HSPF for single package system heat pumps. The primary focus of the EA is the effect of alternative efficiency standards on air resources resulting from decreased emissions from fossil-fueled electricity generation. For each of the trial standard levels, DOE used the NEMS–BRS model to calculate total power sector emissions of nitrogen oxide, sulfur dioxide, and carbon. As explained in Section VIII.A. of this Supplementary Information, on the basis of the EA, DOE determined that the environmental effects associated with the standard levels in today's final rule are not significant.

DOE has corrected an error that DOE discovered in the NEMS–BRS, the model used by DOE to estimate both peak power and power plant emission impacts due to appliance standards. As discussed earlier (see Peak Power), DOE conducted a comprehensive review of the end-use load shapes used by NEMS–BRS, not only for the residential sector and, specifically, the air-conditioning end-use, but for the commercial, industrial, and transportation sectors as well. Several problems were discovered with the load shapes and, as a result, an alternative set of sectoral end-use load shapes were assigned to NEMS–BRS. By implementing a new set of sectoral load shapes, NEMS–BRS estimates greater power plant emission impacts (in the form of reduced CO_2 and NO_X emissions) from increased central air conditioner and heat pump standards. With regard to NO_X emissions, the actual reductions that result from more stringent efficiency standards are likely to be less than the original DOE estimates because some provisions of the Clean Air Act (CAA) were not explicitly modeled in the version of NEMS–BRS used for this analysis (AEO2000). Some of these provisions have been incorporated in subsequent AEOs. In addition, EPA is expected to promulgate regulations during the analytic period in question that are likely to further constrain NO_X emissions and reduce the impact that efficiency standards would have on NO_X and other environmental emissions. Appendix M of the TSD includes an updated set of power plant emission impacts. The changes resulting from this NEMS–BRS error correction do not affect DOE's finding of no significant impact.

6. Employment Impacts

With regard to the impact that amended central air conditioner and heat pump standards have on national employment, both ARI and Rheem are concerned that high efficiency standards can lead to job losses in the air-conditioning industry's manufacturing sector. Rheem states that fewer units will be sold due to the higher purchase prices associated with more efficient equipment. Fewer equipment sales will in turn reduce the need for personnel in manufacturing facilities and design groups. (Rheem, No. 248 at p. 3). ARI states that DOE's decision to issue 13 SEER standards in its January 22 final rule was in part based on the fact that unemployment was then at the lowest rate in 30 years. Because the current state of the national economy is certainly worse than when DOE issued its January 22 final rule, ARI claims that 13 SEER standards would have a much worse impact on the air-conditioning industry than initially forecasted by DOE. In any case, ARI points out that DOE's analysis demonstrates that 12 SEER standards would have approximately 50 percent fewer job losses compared to 13 SEER standards. ARI asserts that this difference in job losses is significant and demonstrates that the proposed 12 SEER standards are a much better choice. (ARI, No. 259 at pp. 11–12, 31–32).

OOE has a much different perspective on DOE's employment impact analysis. OOE states that it is purely speculative to claim that there is a distinguishable difference between the impacts that 12 SEER and 13 SEER standards have on the national economy. The accuracy of the macroeconomic model used by DOE to estimate employment impacts does not allow for such a distinction. (OOE, No. 275 at pp. 3–4).

As stated in the January 22 final rule, DOE estimated the impacts of the new standards on national labor demand using an input/output model of the U.S. economy. *See* 66 FR 7192. The model characterizes the interconnections between 35 economic sectors using data from the Bureau of Labor Statistics. For some years after the new standards go into effect, new consumer expenditure on air conditioners and heat pumps each year outpaces their annual energy savings. This activity redirects expenditures into the manufacturing sector, which is less labor intensive than other sectors of the economy,[19] producing a gain of jobs in the manufacturing sector that is less than the loss of jobs in other sectors of the economy. Also, a loss of jobs results in the utility sector due to its loss of revenues. As annual consumer energy savings begin to exceed annual new expenditures on air conditioners, eventually the new standards will produce a net gain in national employment.

The increases or decreases in the net demand for labor in the economy estimated by the input/output model due to air conditioner and heat pumps standards are likely to be very small relative to total national employment. The following reasons were given in the January 22 final rule for the conclusion that any modest changes in employment were in doubt (66 FR 7192):

- Unemployment is now at the lowest rate in 30 years. If unemployment remains very low during the period when the standards are put into effect, it is unlikely that the standards alone could result in any change in national employment levels;
- Neither the BLS data nor the input-output model used by DOE include the quality or wage level of the jobs. The losses or gains from any potential employment change may be offset if job quality and pay also change; and
- The net benefits or losses from potential employment changes are a result of the estimated net present value of benefits or losses likely to result from air conditioner and heat pump standards. It may not be appropriate to identify and consider separately any employment impacts beyond the calculation of net present value.

Although, as noted by ARI, unemployment is no longer as low as it was at the time the January 22 final rule was issued, the annual unemployment rate in 2001, (4.8 percent) is only slightly higher than the annual rates for 1998, 1999, and 2000 and still less than the annual rates for all other years in the 1990's.[20] Thus, after discounting the first factor cited above, and considering the other two legitimate concerns regarding the interpretation and use of the employment impacts analysis, DOE cannot conclude that the central air conditioner and heat pump standards issued in today's final rule are likely to

[19] Bureau of Economic Analysis, Regional Multipliers: A user Handbook for the Regional Input-Output Modeling System (RIMS II).

[20] U.S. Department of Labor—Bureau of Labor Statistics (BLS), Labor Force Statistics from the Current Population Survey. BLS Web site *http://stats.bls.gov:80/cps/home.htm*>.

result in appreciable job losses to the nation.

7. Space-Constrained Products

a. Through-the-Wall Products

All parties commenting on DOE's proposed standards for through-the-wall products supported the proposed standards—10.9 SEER and 7.1 HSPF for split system air conditioners and heat pumps and 10.6 SEER and 7.0 HSPF for single package air conditioners and heat pumps. (Austin Energy, No. 243 at p. 3; OOE, No. 275 at p. 4; Lennox, No. 272 at p. 3; ASE, No. 282 at p. 4; ACEEE, No. 284 at pp. 13–14).

Thus, DOE is adopting as minimum efficiency standards for the through-the-wall products the standards proposed in the July 25 SNOPR.

b. Small Duct, High Velocity Systems

DOE received information in the rulemaking that indicated that the special characteristics of small duct, high velocity (SDHV) air conditioner and heat pump systems make it unlikely such systems could meet the 12 SEER/7.4 HSPF standard established for conventional products. Spacepak, Unico, and ARI all support the creation of a separate product class for SDHV systems and the development of technologically feasible and economically justified standards for this product. Although all three comments are in agreement with regard to the establishment of a new product class for SDHV systems, Unico and ARI are in disagreement over how these systems should be tested. While ARI recommends that no special consideration be given for SDHV systems and, therefore, no changes be made to the test procedures for central air conditioners and heat pumps, Unico proposes three options for amending the test procedure to rate SDHV systems. The three options include: (1) A coil-only test with a higher allowable coil pressure drop and use of a default fan power; (2) coil and blower tested with a 1.2 inch minimum external static pressure; and (3) coil-only testing with existing coil pressure drop allowance and default fan power without mention of the blower. (Spacepak, No. 267 at p. 1; Unico, No. 251 at pp. 3–4; ARI, No. 259 at p. 35).

While DOE agrees with public comments stating that these systems should not be subject to the standards set for conventional products, DOE does not currently have an analytical basis for setting a new standard for SDHV systems. DOE is currently in the process of amending the test procedure for rating the performance of central air conditioners and heat pumps and will take the above comments into consideration when determining the appropriate testing requirements for SDHV systems. DOE has started the research needed to propose amended standards for SDHV systems and it intends to initiate a rulemaking shortly for this product class.

8. Basis for HSPF Level

ARI stated in its comments that if a 12 SEER standard is adopted for central air conditioning heat pumps, the HSPF should be no higher than 7.3. ARI believes the HSPF should be based on an analysis of the SEER–HSPF relationships across equipment of varying capacity ratings. It faults DOE's analysis for relying on an analysis of only 3-ton equipment to determine the HSPF. (ARI, No. 259 at p. 4).

As DOE explained in the preamble to the January 22 final rule, DOE established the SEER–HSPF pairings in order to maintain the offset between the minimum SEER and the minimum HSPF in the current standards. Because heating energy is a large fraction of total heat pump energy consumption, DOE stated it would not relax the HSPF level in the absence of sound evidence regarding the burdens that would be mitigated (66 FR 7184). DOE continues to think an HSPF of 7.4 is the appropriate level for 12 SEER, and today adopts that level. DOE's decision is supported by data discussed in the TSD (Section 4.6.2.1) which shows that most models of equipment below 3-tons meet or exceed an HSPF of 7.4, and almost a third of models available below 20,000 BTU/hr meet or exceed an HSPF of 7.4.

9. Non-Regulatory Approaches

ARI, Carrier, and Mercatus Center contended that DOE did not adequately evaluate the national impacts of non-regulatory programs for improving the efficiency of central air conditioners and heat pumps. ARI claimed that by combining several non-regulatory alternatives, such as consumer tax credits, consumer rebates and low-income subsidies, the amount of energy saved could increase to 3.5 quads while the net present value would remain relatively unchanged. (ARI, No. 259 at pp. 15–16). Carrier points out that DOE overlooked the energy saving benefits due to the proper installation and maintenance of air-conditioning equipment. Carrier claims that the total energy savings from these actions far exceed those limited to increasing the SEER of the equipment. In stating the proposed 12 SEER standards represent an appropriate level for the entire nation, Carrier recognizes that there are some regions of the country that could benefit from higher efficiency for unique climate or electrical supply reasons. In these instances, government agencies and utilities should provide incentives to encourage the use of higher efficiency equipment. (Carrier, No. 280 at p. 3). Mercatus Center states that DOE does not evaluate non-regulatory programs adequately because it assumes their effects rather than estimating them based on any credible data or evidence. (Mercatus Center, No. 242 at p. 13).

DOE disagrees with this comment. In determining the base case for the analysis of the highest efficiency standards that are technologically feasible and economically justified (i.e., the energy consumption likely to occur in the absence of amended standards), DOE gave adequate consideration to all non-regulatory market forces likely to occur in the absence of amended standards. Additionally, the Regulatory Impact Analysis estimated the national energy savings and net present value that would result from non-regulatory approaches including: (1) Consumer product labeling, (2) public education, (3) prescriptive standards, (4) consumer tax credits, (5) manufacturer tax credits, (6) consumer rebates, (7) low income subsidies, (8) voluntary efficiency targets, and (9) mass government purchases. The analysis found that none of them would save an equivalent amount of energy as energy conservation standards.

10. Energy Policy

On the issue of energy policy, several comments claimed that DOE's action of withdrawing the 13 SEER standards issued in the January 22 final rule is not consistent with the current Administration's own National Energy Policy. ASAP, ASE, CEC, and NRDC all note that the Administration calls for appliance standards as way to moderate growth in electricity demand and limit consumer energy bills. (ASAP, No. 244 at p. 1; ASE, No. 282 at p. 2; CEC, No. 263 at p. 2; NRDC, No. 250 at p. 28). NRDC also states that the relaxation of the 13 SEER standard is inconsistent with the obligations of the United States under the United Nations Framework Convention on Climate Change (UNFCCC), to which our country became a Party with the advice and consent of the Senate in 1992. (NRDC, No. 250 at pp. 29–30).

DOE disagrees that its action to finalize 12 SEER standards for central air conditioners and heat pumps is inconsistent with either the Administration's National Energy Policy or with the United States' obligations under the UNFCCC. The 12 SEER

standards being finalized today significantly increase the minimum efficiency requirements for central air conditioners and heat pumps. Thus, the policy to amend the standards is consistent with the Administration's call to use appliance standards as a method to moderate growth in electricity demand and limit consumer energy bills.

VII. Analytical Results and Conclusions

A. Overview of Analytical Results

1. General

Although DOE reassessed the benefits and burdens of the trial standard levels in arriving at the determinations in today's rule, the underlying analyses are unchanged from those presented in the January 22 final rule except for additional analysis of through-the-wall product classes included as Appendix L to the TSD. Briefly, DOE examined five standard levels. Table 3 presents the trial standards levels analyzed and the corresponding efficiency level for each class of product. Trial Standard Level 5 is the Max Tech Level for each class of product. Trial Standard Level 4 was the one DOE adopted for the standards set forth in the January 22 final rule. Trial Standard Level 2 is the one DOE today determines to be the maximum efficiency that is technologically feasible and economically justified.

TABLE 3.—TRIAL STANDARDS LEVELS FOR CENTRAL AIR CONDITIONERS AND HEAT PUMPS (SEER)

Trial standard level	Split air conditioners	Packaged air conditioners	Split heat pumps	Packaged heat pumps
1	11	11	11	11
2	12	12	12	12
3	12	12	13	13
4	13	13	13	13
5	18	18	18	18

For each trial standard examined, several different scenarios were analyzed consisting of variations on: (1) Electricity price and housing projections; (2) equipment efficiency distributions; (3) manufacturer cost estimates; and (4) societal discount rate. Electricity price and housing projections were based on three different forecasts from the Energy Information Agency's 2000 Annual Energy Outlook (AEO): (1) Reference Case, (2) High Growth Case, and (3) Low Growth Case. DOE analyzed three efficiency scenarios, each of which assumed a different efficiency distribution after new standards would take effect: (1) NAECA scenario, (2) Roll-up scenario, and (3) Shift scenario. *See* October 5, 2000 NOPR for an explanation of the three scenarios (65 FR 59596, notes 10 through 12 and accompanying text). Under the standard levels in today's rule, DOE believes that the NAECA scenario most closely represents the likeliest impact of the new standards, as explained in Chapter 8 of the TSD. DOE analyzed two manufacturer cost scenarios: (1) Based on reverse engineering estimates, and (2) based on ARI-provided mean cost estimates. For the reasons given in the preamble to the January 22 final rule (66 FR 7177–78), DOE expects manufacturer costs under the amended standards will lie closer to the estimates produced through DOE's reverse engineering analysis, which lie between ARI's minimum and ARI's mean cost values. DOE assumed a societal discount rate of 7 percent for calculating net present value (NPV). However, a 3 percent value was investigated as an alternative scenario in accordance with the Office of Management and Budget's (OMB) *Guidelines to Standardize Measures of Costs and Benefits and the Format of Accounting Statements.*

2. Through-the-Wall Products

In response to comments on the October 5, 2000 NOPR, DOE conducted additional analysis on the cost and technical issues related to through-the-wall air conditioner and heat pump products. The analysis is described in detail in Appendix L of the TSD and is summarized here.

DOE performed a design assessment on two split through-the-wall systems and one packaged through-the-wall system. All systems are designed primarily for the replacement market and fit the physical definition of through-the-wall equipment proposed in the October 5, 2000 NOPR and July 25 SNOPR. The design assessment sought to identify the cost and efficiency impacts of employing commonly applied techniques to improve efficiency including reduction of air leakage and improvement in airflow, utilizing more efficient compression and fan motors, and increasing heat exchanger surface area. Emerging technologies and modulating technologies were not considered since they are not likely to be applied in conventional baseline equipment.

The cost estimation for the analysis was based on a modified version of the reverse engineering cost models developed as part of this rulemaking for conventional products. The performance impacts of employing various design options were estimated utilizing a spreadsheet model populated with actual performance data and engineering guidelines.

The analysis concluded that utilizing commonly applied technologies and designs, the most constrained through-the-wall split-system analysis could increase its SEER rating from 10.0 SEER to as high as 11.4 SEER, and the packaged system analysis could increase its SEER rating from 9.7 SEER to 10.6 SEER. Employing all improvements would add $106 and $129 to the retail price of the equipment, respectively, comparable to the increases expected in conventional equipment moving to a 12 SEER standard.

To explore the effects that more stringent standards for through-the-wall products would have on consumers, DOE performed a life-cycle cost analysis. The life-cycle cost analysis for through-the-wall consumers used a subset of consumers identified as living in multi-family dwellings, which are the predominate application for through-the-wall products.

In the July 25 SNOPR, DOE proposed, based on its analysis, a 10.9 SEER/7.1 HSPF standard for through-the-wall split systems and a 10.6 SEER/7.0 HSPF standard for through-the-wall single package system products. After considering public comments, all of which supported the proposed levels, DOE today adopts those levels as final standards for through-the-wall products.

3. Small Duct, High Velocity Systems

In response to comments on the July 25, 2001 SNOPR, DOE has determined that additional analysis on the cost and technical issues related to SDHV air conditioner and heat pump products are

needed to determine appropriate minimum efficiency standards for this class of product. The analysis plan for establishing the manufacturing cost and efficiency relationship for SDHV systems has yet to be developed, but DOE intends to involve the manufacturers that produce these products (Spacepak and Unico) in the planning process.

To explore the effects that more stringent standards for SDHV systems have on consumers, DOE intends to perform a life-cycle cost analysis. The life-cycle cost analysis for SDHV consumers will use a subset of consumers identified as probable candidates for the application of SDHV products.

Although DOE has concluded that SDHV systems warrant their own product class, it has yet to determine an appropriate minimum efficiency standard for them. Therefore, this final rule provides that the NAECA-prescribed minimum efficiency standards covering all product types (e.g., 10 SEER/6.8 HSPF for split system air conditioners) will remain applicable to SDHV systems. DOE intends to conduct a separate rulemaking for SDHV systems to establish appropriate minimum efficiency standards for this class of product.

B. Conclusions Regarding Conventional Products

EPCA specifies that any new or amended energy conservation standard for any type (or class) of covered product shall be designed to achieve the maximum improvement in energy efficiency which the Secretary determines is technologically feasible and economically justified (42 U.S.C. 6295(o)(2)(A)). In determining whether a standard is economically justified, the Secretary must determine whether the benefits of the standard exceed its burdens (42 U.S.C. 6295(o)(2)(B)(i)). The amended standard must ''result in significant conservation of energy'' (42 U.S.C. 6295(o)(3)(B)).

In conducting its analysis, DOE considers the impacts of standards beginning with the Max Tech Level, *i.e.,* Trial Standard Level 5 in this rulemaking. DOE then considers less efficient levels until it reaches the level which is both technologically feasible and economically justified.

To aid the reader in the discussion of the benefits and burdens of the trial standard levels, DOE includes a summary of the analysis results for all of the levels in Table 4.[21] Table 4 presents a summary of quantitative analysis results for each trial standard level based on the assumptions DOE considers most plausible. These include manufacturing cost estimates from the reverse engineering, an 18.4-year equipment lifetime with one compressor replacement at 14 years, and electricity prices based on the AEO2000 Reference Case.

TABLE 4.—SUMMARY OF QUANTITATIVE RESULTS [1]

	Trial Std 1	Trial Std 2	Trial Std 3	Trial Std 4	Trial Std 5
SEER levels for most products	11	12	12 for CAC/ 13 for HP.	13	18
Primary Energy Saved (quads)	1.7	3.0	3.5	4.2	8.8
Generation Capacity Offset (GW)	4.4	8.7	10.1	12.6	21.9
NPV ($billion)					
7% Discount Rate	2	2	1	1	(10)
Industry Impacts (million $) [2]					
Cumulative Change in Industry NPV	(30)	(159)	(171)	(303)	—
Differential impact between Industry Sub-groups [3]	75	238	261	429	—
Cumulative Regulatory Burden on Industry	(>509) ..	(>638) ..	(>650) ..	(>782) ..	—
Minimum net cash flow	62	31	18	(3)	—
Life-Cycle Cost Savings ($) [4]					
Split AC	75	113	113	113	(137)
Packaged AC	78	163	163	29	(276)
Split HP	209	365	372	372	(41)
Packaged HP	207	421	353	353	166
Equipment Price Increase ($)					
Split AC	91	213	213	335	754
Packaged AC	89	158	158	425	859
Split HP	55	144	332	332	1039
Packaged Heat Pump	92	149	435	435	985
Fraction of all Consumers with Net LCC Losses >2% (%)					
Split AC	2	25	25	39	68
Packaged AC	1	9	9	52	73
Split HP	0	0	6	6	57

[21] All cumulative effects that are not monetary are not discounted. Monetary effectgs are discounted to 1998 dollars.

TABLE 4.—SUMMARY OF QUANTITATIVE RESULTS [1]—Continued

	Trial Std 1	Trial Std 2	Trial Std 3	Trial Std 4	Trial Std 5
Packaged Heat Pump	0	0	12	12	48
Fraction of Low Income Consumers with Net LCC Losses >2% (%)					
Split AC	5	34	34	50	77
Packaged AC	2	14	14	61	80
Split HP	0	0	12	12	75
Packaged Heat Pump	0	0	20	20	66

[1] Parentheses indicate negative (−) values. Unless otherwise noted, Trial Standard Levels 1–3 refer to the NAECA efficiency scenario, and Trial Standard Levels 4 and 5 refer to the Roll-up efficiency scenario.
[2] Not calculated at Trial Standard Level 5.
[3] The benefit accruing to the Higher Operating Cost subgroup compared to the Lower Operating Cost subgroup.
[4] Negative values indicate LCC increases.

In addition to the quantitative results, DOE also considers other burdens and benefits that might affect the economic justification.

The potential to improve the reliability of the electricity system is considered by some to be the major benefit that DOE had not quantified explicitly. In areas where the occurrence of blackouts (and brownouts) can be reduced through expansion of system capacity, the economic value of avoided blackouts associated with reductions in peak load cannot exceed the value of the avoided capacity expansion. That value is already captured in DOE's analysis as savings in consumer utility bills. However, in areas that are unable to maintain adequate capacity reserves, the value of avoided blackouts associated with reductions in peak demand often far exceed the normal costs of capacity expansion.[22] DOE has reexamined claims that the energy efficiency standards under consideration could improve significantly electric system reliability over the long term (see discussion at Section VI.G.2).

DOE also recognizes that the adopted standards could result in additional unquantifiable benefits and burdens. These include the avoidance of environmental impacts associated with the siting of some powerplants, a possible increase in health problems caused by consumers foregoing air conditioner purchases, a possible reduction in the ability of the product to dehumidify, a possible lessening of competition, and possible difficulty in installing the new baseline products into replacement applications.

First DOE considered Trial Standard Level 5, the Max Tech Level for each of four classes of products, representing uniform 18 SEER requirements. The manufacturing cost DOE assumes for Trial Standard Level 5 is equal to the cost of 15 SEER equipment, rather than the cost of 18 SEER equipment, since manufacturer cost data were not available for the 18 SEER efficiency levels. Because of that assumption, DOE expects that its estimate of the cost and price of the product at Trial Standard Level 5 are understated. Trial Standard Level 5 would likely save 8.8 quads of energy between 2006 and 2030 which DOE considers significant. The energy savings through 2020 would result in the avoidance of approximately 22 gigawatts (GW) of installed generation capacity in 2020. For comparison, the generating capacity is equivalent to roughly 55 large, 400 megawatt, power plants, and reduced emissions would range up to 73 Mt of carbon equivalent and up to 279 kt of NO_X.[23] Furthermore, for the nation as a whole, Trial Standard Level 5 is estimated to result in a net cost in excess of $10 billion. DOE did not calculate manufacturer impacts at this trial standard level, determining based on preliminary evaluation that they would be severe and unacceptable.

At Trial Standard Level 5, the average consumer would experience an increase in life-cycle cost. Compared to today's standards, purchasers of split central air-conditioners, the predominate class of central air conditioner with 65 percent of the sales of central air conditioners and heat pumps, would most likely lose in excess of $137 over the life of the appliance. Purchasers of split heat pumps, the predominant class of heat pump, would most likely lose in excess of $41. These life-cycle cost estimates represent lower bounds to the actual costs because they do not include the additional price the consumer would pay over the price of a 15 SEER product, which would increase the life-cycle cost considerably.

DOE concludes that at Trial Standard Level 5, the benefits of energy and energy cost savings, and emission reductions would be outweighed by the negative economic impacts to the nation, to the vast majority of consumers and to the manufacturers. Consequently, DOE has determined that Trial Standard Level 5, the Max Tech Level, is not economically justified.

Next, DOE considered Trial Standard Level 4, the level that the previous Administration determined to be economically justified in the January 22 final rule. This level specifies 13 SEER equipment for all product classes. In considering Trial Standard Level 4, DOE assumed the Roll-up efficiency scenario and reverse engineering cost estimates to be the most probable. Under the Roll-up scenario, equipment that in the base case was forecast to be less efficient than the trial standard level is assumed to move up to the standard level, and equipment forecasted to be at or above the trial standard level is assumed not to increase in efficiency. (*See* Section 8.4.8 of the TSD for the reasons DOE considers the Roll-up efficiency scenario most probable above Trial Standard Level 3 and the NAECA efficiency scenario most probable at Trial Standard Levels 1, 2, and 3; *see* Section 7.2.2.5 of the TSD for the current efficiency distribution for each product class and for the assumed efficiency distributions after new standards.)

Primary energy savings between 2006 and 2030 is estimated to be 4.2 quads, which DOE considers significant. The estimated energy savings through 2020 would result in avoidance of approximately 12.6 GW in installed

[22] For instance, if capacity-related blackouts cost a region $1 billion, society would be willing to pay up to $1 billion to prevent them. If those blackouts can be prevented through either a capacity expansion or a reduction in peak demand, and the new capacity would cost $100 million, the value of the reduction in peak demand can be no more than $100 million. If the region is short on capacity and cannot add new capacity quickly, however, the same reduction in peak demand then can equal the value of the avoided blackout ($1 billion) since there is no feasible alternative.

[23] Generating capacity, carbon, and NO_X reductions are based on Roll-up efficiency scenario.

generating capacity in 2020. For comparison, the generating capacity is equivalent to avoiding the need for 32 large 400 megawatt power plants, and reduced emissions would range up to 33 Mt of carbon equivalent and up to 111 kt of NO_X.[24] Trial Standard Level 4 would lower peak electricity demand compared to the base case. That would allow utility service areas to build less new capacity, with attendant environmental benefits.

A measure of an efficiency standard's economic benefit to the nation is the increase in net present value, which is the difference in total cost, both initial cost and discounted operating cost, between the base case (without a new standard) and the case with a new standard. For Trial Standard Level 4, the increase in national net present value is estimated to be $1 billion.[25]

Since DOE expects the Roll-up efficiency scenario to result from standards adopted at Trial Standard Level 4, the burdens of Trial Standard Level 4 on manufacturers are likely to be severe. Not only does DOE expect the average loss in industry NPV to be around 20 percent, but impacts on most manufacturers would reach almost 30 percent. Their long term drop in return on investment and short term drop in cash flow suggest that standards adopted at Trial Standard Level 4 could accelerate the consolidation trend, possibly resulting in fewer choices for consumers and in a slowing of the pace of innovation well into the future. Furthermore, the cumulative impact on the industry of all new Federal and State regulations is estimated to exceed $782 million.

For Trial Standard level 4, the average purchaser of a split system air conditioner, the predominant class with 65 percent of all shipments, would see the installed price of $2236 rise to $2571, an increase of $335. Lower utility bills from the energy savings would repay this increase in 11.3 years and produce a total saving with a net present value of $113 over the 18.4 year life of the product. The average purchaser of a single package air conditioner, which represents 10 percent of all shipments, would see the average installed price of $2607 rise to $3032, an increase of $425. Lower utility bills from the energy savings would repay this increase in 14.5 years and produce a total saving with a net present value of $29 over the 18.4 year life of the product.

The average purchaser of a split system heat pump, which represents 22 percent of all shipments, would see the average installed price of $3668 rise to $4000, an increase of $332. Lower utility bills from the energy savings would repay this increase in 6.4 years and produce a total saving with a net present value of $372 over the 18.4 year life of the product. The average purchaser of a single package heat pump, which represents 4 percent of all shipments, would see the average installed price of $3599 rise to $4034, an increase of $435. Lower utility bills from the energy savings would repay this increase in 8.4 years and produce a total saving with a net present value of $353 over the 18.4 year life of the product. While the average consumer purchasing a 13 SEER air conditioner or heat pump would experience a net saving over the lifetime of the product, a substantial fraction of all households would experience net costs exceeding 2 percent of the total life-cycle cost of today's baseline units. Thirty-nine percent of the households with split system air conditioners, 52 percent with single package air conditioners, 6 percent with split system heat pumps and 12 percent with single package heat pumps would experience a net cost. The percentage of low-income consumers who would experience net costs exceeding 2 percent of the total life-cycle cost of today's baseline units is greater than that of the average household; 50 percent of low-income households with split system air conditioners, 61 percent with single package air conditioners, 12 percent with split system heat pumps and 20 percent with single package heat pumps. Also, the possibility that many consumers would incur substantial installation costs is great because 13 SEER equipment often will not fit in the same space as current 10 SEER equipment. In light of the higher purchase cost increase experienced by all consumers and the percentage of households that experience life-cycle cost increases, in particular low-income households, which experience life-cycle cost increases, consumer burdens are particularly acute under Trial Standard Level 4.

DOE concludes that at Trial Standard Level 4, the benefits of energy savings, generating capacity and emission avoidance, and net benefit to the nation's consumers would be outweighed by the maldistribution of consumer benefits, the potential increase in installation costs for some consumers related to installing potentially larger equipment, and the cost to manufacturers taking into account the cumulative regulatory burden. Trial Standard Level 4 introduces the serious concern that prospective owners of air conditioning heat pump systems would instead purchase less costly air conditioner resistance heater combinations because of the substantial purchase price differential between heat pumps and air conditioners. As discussed in the January 22 notice of final rulemaking (66 FR 7196), the energy savings from the more efficient heat pumps would be eliminated if only a small fraction of heat pump owners (4 percent) switched to resistance heating. Those households residing in manufactured housing, which is often shipped from the factory without an air conditioning system but with a resistance furnace, might be inclined to simply add a lower cost air conditioner and retain the resistance furnace instead of replacing the resistance furnace with a heat pump. In short, the large financial burdens of Trial Standard Level 4 are not outweighed by the expected financial benefits. Other potential burdens include possible health effects caused indirectly by foregone air conditioning purchases and possible lessening of competition, as determined by DOJ in its letter of April 5, 2001 to DOE regarding the January 2001 final rule. Consequently, DOE determines that Trial Standard Level 4 is not economically justified.

Next, DOE considered Trial Standard Level 3. This level specifies 12 SEER equipment for air conditioners and 13 SEER equipment for heat pumps. In considering Trial Standard Level 3, DOE assumed the NAECA efficiency scenario and reverse engineering cost estimates to be the most probable. (*See* Section 8.4.8 of the TSD for the reasons DOE considers the Roll-up efficiency scenario most probable at Trial Standard Levels 4 and 5 and the NAECA efficiency scenario most probable at Trial Standard Levels 1, 2 and 3.)

For Trial Standard Level 3, primary energy savings between 2006 and 2030 are estimated to be 3.5 quads, which DOE considers significant. The energy savings through 2020 would result in avoidance of approximately 10.1 GW in installed generating capacity in 2020. For comparison, the generating capacity is equivalent to avoiding the need for 25 large 400 megawatt power plants, and reduced emissions would range up to 28 Mt of carbon equivalent and up to 97 kt of NO_X.[26] Trial Standard Level 3 would

[24] Generating capacity, carbon, and NO_X reductions are based on Roll-up efficiency scenario.

[25] Under the NAECA efficiency scenario, the increase in national net present value would be zero.

[26] Generating capacity, carbon, and NO_X reductions are based on NAECA efficiency scenario.

lower peak electricity demand compared to the base case. That would allow utility service areas to build less new capacity, with attendant environmental benefits.

For Trial Standard Level 3, the increase in national net present value is estimated to be $1 billion.[27] Since DOE expects the NAECA efficiency scenario to result from standards adopted at Trial Standard Level 3, the burdens of Trial Standard Level 3 on manufacturers are likely to be less severe than at Trial Standard Level 4. DOE expects the average loss in industry NPV to be around 11 percent, but impacts on most manufacturers would be around 17 percent. Their long term drop in return on investment and short term drop in cash flow suggest that standards adopted at Trial Standard Level 3 could accelerate the consolidation trend, possibly resulting in fewer choices for consumers and in a slowing of the pace of innovation well into the future. Furthermore, the cumulative impact of all new Federal and State regulations would exceed $650 million.

At Trial Standard Level 3, the average purchaser of a split system air conditioner, the predominant class with 65 percent of all shipments, would see the installed price of $2236 rise to $2449, an increase of $213. Lower utility bills from the energy savings would repay this increase in 9.8 years and produce a total saving with a net present value of $113 over the 18.4 year life of the product. The average purchaser of a single package air conditioner, which represents 10 percent of all shipments, would see the average installed price of $2607 rise to $2765, an increase of $158. Lower utility bills from the energy savings would repay this increase in 7.5 years and produce a total saving with a net present value of $163 over the 18.4 year life of the product.

The average purchaser of a split system heat pump, which represents 22 percent of all shipments, would see the average installed price of $3668 rise to $4000, an increase of $332. Lower utility bills from the energy savings would repay this increase in 6.4 years and produce a total saving with a net present value of $372 over the 18.4 year life of the product. The average purchaser of a single package heat pump, which represents 4 percent of all shipments, would see the average installed price of $3599 rise to $4034, an increase of $435. Lower utility bills from the energy savings would repay this increase in 8.4 years and produce a total saving with a net present value of $353 over the 18.4 year life of the product.

Like Trial Standard Level 4, Trial Standard Level 3 raises the serious concern that prospective owners of air conditioning heat pump systems would purchase less costly air conditioner resistance heater combinations. In this case there is a potential loss of energy savings because of the lower standards for air conditioners compared to heat pumps, which could eliminate all energy savings from the more efficient heat pumps if only a small fraction of heat pump owners (4 percent) switched to resistance heating. Trial Standard Level 3 poses a serious concern regarding potential anti-competitive effects because the size and cost of the higher efficiency heat pumps could reduce competition between manufacturers of heat pumps and manufacturers of resistance heating and other lower cost heating systems.

DOE concludes that, at Trial Standard Level 3, the benefits of energy savings, generating capacity and emission avoidance, and net benefit to the nation's consumers would be outweighed by the maldistribution of consumer benefits and manufacturer costs, the likelihood of higher installation costs resulting from potentially larger equipment, and the net impact on the industry in light of the cumulative regulatory burden. The most serious concern is the possibility of equipment switching that would likely substantially reduce the calculated energy savings, drastically reducing the potential benefits. Other possible burdens include lessening of competition, as determined by DOJ in its April 5, 2001 letter to DOE regarding the January 2001 final rule, and adverse health effects caused by forgone air conditioner purchases. Consequently, DOE determines that Trial Standard Level 3 is not economically justified.

Next, DOE considered Trial Standard Level 2. This level specifies 12 SEER equipment for all product classes, and this is the level that DOE has determined is the maximum efficiency level that is economically justified. In considering Trial Standard Level 2, DOE assumed the NAECA efficiency scenario and reverse engineering cost estimates to be the most probable. Primary energy savings between 2006 and 2030 is estimated to be 3 quads, which DOE considers significant. The energy savings through 2020 would result in avoidance of approximately 8.7 GW in installed generating capacity in 2020. For comparison, the generating capacity is equivalent to avoiding the need for 22 large 400 megawatt power plants, and reduced emissions would range up to 24 Mt of carbon equivalent and up to 83 kt of NO_X.[28] Trial Standard Level 2 would lower peak electricity demand compared to the base case. That would allow utility service areas to either avoid build less new capacity, with attendant environmental benefits. For Trial Standard level 2, the increase in national net present value is estimated to be $2 billion, which represents the highest level for all the standard levels considered.[29]

Since DOE expects the NAECA efficiency scenario to result from standards adopted at Trial Standard Level 2, the burdens of Trial Standard Level 2 on manufacturers are likely to be moderate. DOE expects the average loss in industry NPV to be around 10 percent, with impacts on most manufacturers around 16 percent. Their long term drop in return on investment and short term drop in cash flow are moderate, suggesting that standards adopted at Trial Standard Level 2 would not accelerate the consolidation trend, and could result in more choices for consumers and raise the pace of innovation. Furthermore, the cumulative impact of all new Federal and State regulations is estimated to exceed $638 million.

For Trial Standard Level 2, the average purchaser of a split system air conditioner, the predominant class with 65 percent of all shipments, would see the installed price of $2236 rise to $2449, an increase of $213. Lower utility bills from the energy savings would repay this increase in 9.8 years and produce a total saving with a net present value of $113 over the 18.4 year life of the product. The average purchaser of a single package air conditioner, which represents 10 percent of all shipments, would see the average installed price of $2607 rise to $2765, an increase of $158. Lower utility bills from the energy savings would repay this increase in 7.5 years and produce a total saving with a net present value of $163 over the 18.4 year life of the product.

The average purchaser of a split system heat pump, which represents 22 percent of all shipments, would see the average installed price of $3668 rise to $3812, an increase of $144. Lower utility bills from the energy savings would repay this increase in 3.9 years and produce a total saving with a net

[27] Under the Roll-up efficiency scenario, the increase in national net present value would be $2 billion.

[28] Generating capacity, carbon, and NO_X reductions are based on NAECA efficiency scenario.

[29] Under the Roll-up efficiency scenario, the increase in national net present value would be $3 billion.

present value of $365 over the 18.4 year life of the product. The average purchaser of a single package heat pump, which represents 4 percent of all shipments, would see the average installed price of $3599 rise to $3748, an increase of $149. Lower utility bills from the energy savings would repay this increase in 4 years and produce a total saving with a net present value of $421 over the 18.4 year life of the product.

While the average consumer purchasing a 12 SEER air conditioner or heat pump would experience a net saving over the lifetime of the product, some households would experience net costs exceeding 2 percent of the total life-cycle cost of today's baseline units. Thus, 25 percent of the households with split system air conditioners and 9 percent with single package air conditioners would experience a net cost. No households with heat pumps would experience a net cost. The percentage of low-income consumers who would experience net costs exceeding 2 percent of the total life-cycle cost of today's baseline units is greater than that for an average household. Thus, 34 percent of low-income households with split system air conditioners and 14 percent with single package air conditioners would experience a net cost. No low-income households with heat pumps would experience a net cost. Also, the possibility that consumers would incur substantial installation costs is less than that with a 13 SEER standard because 12 SEER equipment is more likely to fit in the same space as current 10 SEER equipment. In light of the moderate purchase cost increase experienced by all consumers, the percentage of households, in particular low-income households, which experience life-cycle cost increases, consumer burdens are substantially less severe under Trial Standard Level 2 than Trial Standard Level 4.

After carefully reconsidering the analyses and comments, and giving appropriate weight to consumer impacts and cumulative regulatory burden in the assessment of the benefits and burdens, DOE today amends the energy conservation standards for central air conditioners and central air conditioning heat pumps at Trial Standard Level 2. DOE concludes this standard saves a significant amount of energy and is technologically feasible and economically justified. In determining economic justification, DOE concludes that the benefits of energy savings, the projected amount of avoided power plant capacity, consumer life-cycle cost savings, national net present value increase, and emission reductions resulting from the standards outweigh the burdens. The burdens include the loss of manufacturer net present value, taking into account the cumulative regulatory burden and annual cash flow, increases in life-cycle cost for some users of products covered by today's rule, any possible increase in health problems caused by consumers foregoing air conditioner purchases, any possible reduction in the ability of the product to dehumidify, any possible effect on competition (addressed by DOJ in its October 19, 2001 letter to DOE), and any possible difficulty in installing the new baseline products into replacement applications.

C. Conclusions Regarding Space-Constrained Products

If a 12 SEER minimum requirement for air conditioners and heat pumps is implemented, DOE's analysis shows that of all potential space-constrained products, only those with through-the-wall condensers and small duct, high velocity systems need special consideration.

1. Through-the-Wall Products

The TSD contains a new Appendix L describing the results of our recent re-evaluation of those products. They demonstrate that split through-the-wall equipment can attain 10.9 SEER using designs and technologies that are commonly applied or available, with price impacts similar to those that conventional equipment would experience in meeting the proposed 12 SEER standard. The packaged equipment analyzed was demonstrated to be capable of attaining only a 10.6 SEER rating, although comments received indicate that one manufacturer of packaged through-the-wall equipment, Armstrong, expects their equipment to be capable of attaining 11 SEER.

Based on this evaluation, DOE adopts new product classes for products that have through-the-wall condensers and are intended for replacement applications. The new classes are required to meet minimum efficiencies lower than those of the other classes: 10.9 SEER and 7.1 HSPF for through-the-wall air conditioner and heat pump split-systems, and 10.6 SEER and 7.0 HSPF for through-the-wall air conditioner single-package systems. DOE's analysis suggests those products can attain these levels without substantial redesign or price increases that would result in a loss of market share to conventional products. Also, the life-cycle cost analysis confirms that, on average, consumers of split through-the-wall equipment would not incur an increase in life-cycle cost, and that consumers of packaged through-the-wall equipment would incur an increase of $52 over the life of the equipment. In no case would any consumer of split through-the-wall products be expected to incur life-cycle costs greater than 2 percent of the total life-cycle cost, and only 17 percent of consumers of packaged through-the-wall equipment would be expected to incur cost increases greater than 2 percent of the total life-cycle cost.

DOE concludes that standard levels higher than 10.9 SEER (split through-the-wall) and 10.6 SEER (packaged through-the-wall) are technologically feasible, but are not economically justified. DOE's analysis on three through-the-wall models suggests that those products could attain efficiencies as high as 11.4 SEER, but the results are not conclusive and cannot be confidently applied to all through-the-wall products. DOE's analysis does not provide enough evidence to convince us that levels higher than 10.9 SEER (10.6 SEER for packaged through-the-wall) will be technologically feasible during the five year period during which manufacturers would prepare to meet the new requirements. DOE's analysis does indicate that opportunities for efficiency improvement do exist, and that manufacturers of those products should continue to investigate those opportunities.

A serious concern that DOE has considered is that the lower through-the-wall standards might encourage purchasers of conventional equipment to shift to through-the-wall products, undermining the benefits of the 12 SEER standard for conventional products. DOE is therefore limiting the new through-the-wall classes to products manufactured before January 23, 2010. *See* definition of ''through-the-wall air conditioner and heat pump.'' Thus, these classes will exist only for a period of four years following the compliance date established for the new standards for conventional products. During that time, the availability of suitable high-efficiency components will likely increase and the manufacturers of through-the-wall products will be able to investigate options for meeting the more stringent 12 SEER level. Both will make it easier for through-the-wall products to attain the 12 SEER minimum efficiency required of other products, thereby making 12 SEER a technologically feasible and economically justified level. The sunset provision will help to ensure that other manufacturers will not make the investment required to market through-

the-wall products heavily for conventional applications during the four year period. It will also limit the time during which lower efficiency through-the-wall equipment is installed, ensuring that additional energy savings associated with the 12 SEER level are realized in a certain time period.

To further limit the application of the through-the-wall class, products in these classes may not exceed 30,000 BTU/hr in cooling capacity, may not contain special weatherization features that would allow them to be installed totally outdoors, and must be marked for installation only through an exterior wall. DOE also limits the size of the area used for condenser air exchange in order to limit these classes to those products intended primarily for replacement applications.

2. Small Duct, High Velocity Systems

In today's final rule, DOE establishes a separate product class for SDHV systems and retains the NAECA standards for these products pending further study to establish appropriate higher standard levels. DOE intends to publish a final rule for the test procedure in the near future. Any future work to establish appropriate minimum efficiency standards for SDHV systems will be based on the testing requirements developed for SDHV systems in the test procedure revision currently being finalized, or in a future revision specifically aimed at SDHV products.

VIII. Procedural Issues and Regulatory Review

A. Review Under the National Environmental Policy Act

DOE prepared an Environmental Assessment (EA) (DOE/EA–1352) available from: U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Forrestal Building, Mail Station EE–41, 1000 Independence Avenue, SW, Washington, DC 20585–0121, (202) 586–0854. DOE found the environmental effects associated with various standard efficiency levels for central air conditioners and heat pumps, including 12 SEER, to be not significant. Therefore DOE is publishing, elsewhere in this issue of the **Federal Register** a Finding of No Significant Impact (FONSI) pursuant to the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. 4321 *et seq.*, the regulations of the Council on Environmental Quality (40 CFR Parts 1500–1508), and DOE's regulations for compliance with NEPA (10 CFR Part 1021).

As previously discussed (Section VI.G.1, ''Peak Power''), the model used by DOE to estimate both peak power and power plant emission impacts due to appliance standards was updated to include a more representative set of end-use load shapes for the residential, commercial, industrial, and transportation sectors. As a result of this update, NEMS–BRS estimates somewhat greater power plant emission impacts (in the form of reduced CO_2 and NO_X emissions) from increased central air conditioner and heat pump standards. Appendix M of the TSD includes an updated set of power plant emission impacts. These changes, which are discussed in the FONSI, do not affect DOE's finding of no significant impact.

The comments of some environmental advocates argue that DOE is required to prepare an environmental impact statement for today's final rule because, in their view, DOE is ''rolling back'' 13 SEER standards, and that constitutes a major agency action significantly affecting the quality of the environment. As explained in Section VI.H.5 of this Supplementary Information, DOE believes these comments are based on an erroneous premise, namely, that the January 22 final rule attained permanent status even though the rule never became effective. Instead, the correct baseline for assessing the impacts of today's rule, in DOE's view, are the existing energy conservation standards established by NAECA (*i.e,* SEER of 10.0 and HSPF of 6.8 for split systems manufactured after January 1, 1992, SEER of 9.7 and HSPF of 6.6 for single package systems manufactured after January 1, 1993). The 12 SEER standard in today's rule will increase the energy efficiency of the most common type of central air conditioners by approximately 20 percent.

B. Review Under Executive Order 12866

Today's regulatory action has been determined to be an ''economically significant regulatory action'' under Executive Order 12866, ''Regulatory Planning and Review.'' 58 FR 51735 (October 4, 1993). Accordingly, today's action was subject to review under the Executive Order by the Office of Information and Regulatory Affairs (OIRA) of the Office of Management and Budget.

The draft submitted to OIRA and other documents submitted to OIRA for review have been made a part of the rulemaking record and are available for public review in DOE's Freedom of Information Reading Room, 1000 Independence Avenue, SW., Washington, DC 20585, between the hours of 9 a.m. and 4 p.m., Monday through Friday, telephone (202) 586–3142.

The October 5, 2000 NOPR contained a summary of the Regulatory Analysis which focused on the major alternatives considered in arriving at the approach to improving the energy efficiency of consumer products. 65 FR 59627–29. The alternatives considered in DOE's analysis are consumer product labeling, consumer education, prescriptive standards, consumer tax credits, consumer rebates, manufacturer tax credits, voluntary efficiency targets, low income subsidy, mass government purchases, and performance standards. The reader is referred to the complete ''Regulatory Impact Analysis,'' which is contained in the TSD, available as indicated at the beginning of this notice or from the contact person named at the beginning of this notice. The TSD provides: (1) A statement of the problem addressed by this regulation, and the mandate for government action; (2) a description and analysis of the feasible policy alternatives to this regulation; (3) a quantitative comparison of the impacts of the alternatives; and (4) the national economic impacts of the proposed standard.

C. Review Under the Regulatory Flexibility Act

The Regulatory Flexibility Act, 5 U.S.C. 601 *et seq.*, requires that a Federal agency prepare a regulatory flexibility analysis for any rule for which the agency is required to publish a general notice of proposed rulemaking. Such an assessment of the impact of regulations on small businesses is not required if the agency certifies that the rule would not, if promulgated, have a significant economic impact on a substantial number of small entities (5 U.S.C. 605(b)). To be categorized as a ''small'' air conditioning and warm air heating equipment manufacturer, a firm must employ no more than 750 employees.

In the October 5, 2000 NOPR, DOE discussed the potential impacts on small businesses of the October 5 proposed rule (corresponding to Trial Standard Level 3), and certified that the proposed standard levels would not have a significant economic impact on a substantial number of small entities. 65 FR 59629–30. DOE reported that nearly all small businesses engaged in the manufacture of central air conditioners and heat pumps produce products that DOE has called ''niche'' products. To avoid adversely impacting manufacturers of niche products, DOE proposed a separate product class for through-the-wall equipment, much of which is manufactured by small

manufacturers. *See* 65 FR 59609–11. In the preamble to the January 22 final rule, DOE addressed comments regarding the impacts more stringent standards might have on the availability of niche products, and although the final rule adopted the higher Trial Standard Level 4 standards, DOE deferred setting an amended standard for niche products. 66 FR 7175, 7196–97. The omission of niche products from the January 22 final rule also addressed the concern expressed by the Department of Justice about the impact of the October 5, 2000, proposed rule on small manufacturers (*see* preamble to January 22 final rule at 66 FR 7192). Because the final rule excluded most products made by small manufacturers, DOE affirmed its certification.

Today DOE publishes energy conservation standards for central air conditioners and heat pumps that correspond to Trial Standard Level 2. Primarily because of severe size constraints, DOE is establishing separate product classes for through-the-wall equipment and small duct, high velocity systems, which will be required to meet a lower SEER and HSPF. In light of these product class exceptions and after considering the information in the TSD and public comments, including the views of the Department of Justice (*see* October 19, 2001, letter in the Appendix to this notice), DOE has concluded that the 12 SEER standards in today's final rule will not have a disproportionate adverse impact on a substantial number of small entities. In its comments, the Office of Advocacy of the U.S. Small Business Administration stated that the proposed 12 SEER standard would substantially improve energy efficiency while preserving competition, innovation and jobs, and, therefore, it strongly supports the 12 SEER standard. On this basis, DOE certifies that today's rule will not have a significant impact on a substantial number of small entities. Accordingly, DOE has not prepared a regulatory flexibility analysis.

DOE's certification is based on an assessment of the impact the standards will have on small entities that would be directly affected by their implementation, which is all the Regulatory Flexibility Act requires. The assertion by ARI, in its petition for consideration (ARI, No. 138, at section m), that DOE is required to assess the indirect effects of proposed standards is contrary to established case law interpreting the Act.

D. Review Under the Paperwork Reduction Act

No new information or record keeping requirements are imposed by this rulemaking. Accordingly, no Office of Management and Budget clearance is required under the Paperwork Reduction Act. 44 U.S.C. 3501 *et seq.*

E. Review Under Executive Order 12988

With respect to the review of existing regulations and the promulgation of new regulations, Section 3(a) of Executive Order 12988, ''Civil Justice Reform,'' 61 FR 4729 (February 7, 1996), imposes on Executive agencies the general duty to adhere to the following requirements: (1) Eliminate drafting errors and ambiguity; (2) write regulations to minimize litigation; and (3) provide a clear legal standard for affected conduct rather than a general standard and promote simplification and burden reduction. With regard to the review required by section 3(a), section 3(b) of Executive Order 12988 specifically requires that Executive agencies make every reasonable effort to ensure that the regulation: (1) Clearly specifies the preemptive effect, if any; (2) clearly specifies any effect on existing Federal law or regulation; (3) provides a clear legal standard for affected conduct while promoting simplification and burden reduction; (4) specifies the retroactive effect, if any; (5) adequately defines key terms; and (6) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. Section 3(c) of Executive Order 12988 requires Executive agencies to review regulations in light of applicable standards in section 3(a) and section 3(b) to determine whether they are met or it is unreasonable to meet one or more of them. DOE reviewed today's rule under the standards of section 3 of the Executive Order and determined that, to the extent permitted by law, this rule meets the relevant standards.

F. Review Under Executive Order 12630

DOE has determined pursuant to Executive Order 12630, ''Governmental Actions and Interference with Constitutionally Protected Property Rights,'' 52 FR 8859 (March 18, 1988), that this rule will not result in any takings that might require compensation under the Fifth Amendment to the United States Constitution.

G. Review Under Executive Order 13132

Executive Order 13132, ''Federalism,'' 64 FR 43255 (August 4, 1999) imposes certain requirements on agencies formulating and implementing policies or regulations that preempt State law or that have federalism implications. Agencies are required to examine the constitutional and statutory authority supporting any action that would limit the policymaking discretion of the States and carefully assess the necessity for such actions. Agencies also must have an accountable process to ensure meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications. DOE published its intergovernmental consultation policy on March 14, 2000. 65 FR 13735. DOE has examined today's rule and has determined that it would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. State regulations that may have existed on the products that are the subject of today's rule were preempted by the Federal standards established in NAECA. As discussed in Section VI.H.3, States can petition DOE for exemption from such preemption to the extent, and based on criteria, set forth in section 327 of EPCA (42 U.S.C. 6297).

H. Review Under the Unfunded Mandates Reform Act of 1995

With respect to a proposed regulatory action that may result in the expenditure by State, local and tribal governments, in the aggregate, or by the private sector of $100 million or more, section 202 of the Unfunded Mandates Reform Act of 1995 (UMRA) requires a Federal agency to publish estimates of the resulting costs, benefits and other effects on the national economy. 2 U.S.C. 1532(a), (b). UMRA also requires each Federal agency to develop an effective process to permit timely input by state, local, and tribal governments on a proposed significant intergovernmental mandate. DOE's consultation process is described in a notice published in the **Federal Register** on March 18, 1997. 62 FR 12820. Today's rule will impose expenditures of $100 million or more on the private sector. It does not contain a Federal intergovernmental mandate.

Section 202 of UMRA authorizes an agency to respond to the content requirements of UMRA in any other statement or analysis that accompanies the proposed rule. 2 U.S.C. 1532(c). The content requirements of section 202(b) of UMRA relevant to a private sector mandate substantially overlap the economic analysis requirements that apply under section 325(o) of EPCA and Executive Order 12866. The ''Regulatory

Impact Analysis'' section of the TSD for this rule responds to those requirements.

Under section 205 of UMRA, DOE is obligated to identify and consider a reasonable number of regulatory alternatives before promulgating a rule for which a written statement under section 202 is required. DOE is required to select from those alternatives the most cost-effective and least burdensome alternative that achieves the objectives of the rule unless DOE publishes an explanation for doing otherwise or the selection of such an alternative is inconsistent with law. As required by section 325(o) of the Energy Policy and Conservation Act (42 U.S.C. 6295(o)), today's rule would establish energy conservation standards for central air conditioners and heat pumps that are designed to achieve the maximum improvement in energy efficiency that DOE has determined to be both technologically feasible and economically justified. A full discussion of the alternatives considered by DOE is presented in the ''Regulatory Impact Analysis'' section of the TSD for today's rule.

I. Review Under the Treasury and General Government Appropriations Act, 1999

Section 654 of the Treasury and General Government Appropriations Act, 1999 (Pub. L. No. 105–277) requires Federal agencies to issue a Family Policymaking Assessment for any proposed rule or policy that may affect family well-being. Today's rule would not have any impact on the autonomy or integrity of the family as an institution. Accordingly, DOE did not prepare a Family Policymaking Assessment.

J. Review Under Executive Order 13211

Executive Order 13211, ''Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use,'' (66 FR 28355, May 22, 2001) requires Federal agencies to prepare and submit to the Office of Information and Regulatory Affairs (OIRA), Office of Management and Budget, a Statement of Energy Effects for any significant energy action. A ''significant energy action'' is defined as any action by an agency that promulgates or is expected to lead to the promulgation of a final rule, and that: (1) Is a significant regulatory action under Executive Order 12866, or any successor order; and (2) is likely to have a significant adverse effect on the supply, distribution, or use of energy; or (3) is designated by the Administrator of OIRA as a significant energy action. For any proposed significant energy action, the agency must give a detailed statement of any adverse effects on energy supply, distribution, or use should the proposed action be implemented, and of reasonable alternatives to the action and their expected benefits on energy supply, distribution, and use.

Today's rule would not have any adverse effects on the supply, distribution, or use of energy in the near term because it would not have any effect on the manufacture of central air conditioners and heat pumps until 2006. In the longer term, beginning in 2006, the standards in this rule would have a small positive impact on the electricity supply in the United States. The standards that DOE is adopting would represent a 20 percent improvement in the energy efficiency of split-system central air conditioners, and a 9 percent improvement in heating efficiency for heat pumps. The standards would improve the cooling efficiency of single-package heat pumps by 24 percent and the heating efficiency of single-package heat pumps by 12 percent.

As explained in Section VII of this Supplementary Information, DOE estimates the standards would save approximately 3 quads of energy over 25 years (2006 through 2030). Also, in determining whether these standards are economically justified, DOE considered as a benefit the potential of the standards to improve the reliability of the electric generation and distribution system or to reduce the environmental impacts associated with new power plants and transmission lines. *See* Section VI.G. of this Supplementary Information. DOE's analysis predicts today's standards would result in an estimated reduction in installed generation capacity in the year 2020 of approximately 8.7 gigawatts. This would be the equivalent of three 400 megawatt coal-fired plants and nineteen 400 megawatt gas-fired plants.

DOE disagrees with the NRDC's view that the levels in the January 22 final rule are the appropriate baseline for determining whether today's rule is likely to have a significant adverse effect on the supply, distribution, or use of energy and, thus, subject to the Executive Order's analysis requirement. (NRDC, No. 250 at p. 9). For reasons stated in Section III, we think the proper baseline is the currently effective standards (*i.e.*, the standards prescribed by NAECA). In any case, section 325 of EPCA requires DOE to weigh all of the significant costs and benefits associated with standard levels that are being considered and not just avoided electricity costs. DOE has set forth its evaluation of costs and benefits elsewhere in this notice (*see* Section VII). DOE has also considered various regulatory and non-regulatory alternatives to today's proposed standard (*see* Section VIII.B., ''Review Under Executive Order 12866,'' and the Regulatory Impact Analysis portion of the TSD). DOE has concluded that the costs associated with elevating the current standard to the standard level set forth in the January 22, 2001, final rule exceed the associated benefits, including the benefit of avoided electricity consumption.

K. Congressional Notification

As required by 5 U.S.C. 801, DOE will submit to Congress a report regarding the issuance of today's final rule prior to the effective date set forth at the outset of this notice. DOE also will submit the supporting analyses to the Comptroller General (GAO) and make them available to each House of Congress. The report will state that it has been determined that the rule is a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects in 10 CFR Part 430

Administrative practice and procedure, Energy conservation, Household appliances.

Issued in Washington, D.C., on May 14, 2002.

David K. Garman,

Assistant Secretary, Energy Efficiency and Renewable Energy.

For the reasons set forth in the preamble, Part 430 of Chapter II of Title 10, Code of Federal Regulations is amended, as set forth below.

PART 430—ENERGY CONSERVATION PROGRAM FOR CONSUMER PRODUCTS

1. The authority citation for Part 430 continues to read as follows:

Authority: 42 U.S.C. 6291–6309; 28 U.S.C. 2461 note.

2. The final rule amending 10 CFR part 430 published January 22, 2001 (66 FR 7170) is withdrawn.

3. Section 430.2 is amended by adding definitions for ''effective date,'' ''maximum allowable energy use,'' ''maximum allowable water use,'' ''minimum required energy efficiency,'' ''small duct, high velocity system,'' and ''through-the-wall air conditioner and heat pump'' in alphabetical order to read as follows:

§ 430.2 Definitions.

* * * * *

Effective date means the date on and after which a manufacturer must comply with an energy conservation standard in the manufacture of a covered product.

* * * * *

Maximum allowable energy use means an energy conservation standard for a covered product, expressed in terms of a maximum amount of energy that may be consumed, which is established by statute or by a final rule that has modified this part pursuant to a date DOE has selected consistent with the Congressional Review Act (5 U.S.C. 801–804) and any other applicable law, or the date on which DOE completes action on any timely-initiated administrative reconsideration, whichever is later.

* * * * *

Maximum allowable water use means an energy conservation standard for a covered product, expressed in terms of a maximum amount of water that may be consumed, which is established by statute or by a final rule that has modified this part pursuant to a date DOE has selected consistent with the Congressional Review Act (5 U.S.C. 801–804) and any other applicable law, or the date on which DOE completes action on any timely-initiated administrative reconsideration, whichever is later.

* * * * *

Minimum required energy efficiency means an energy conservation standard for a covered product, expressed in terms of a minimum efficiency quotient, which is established by statute or by a final rule that has modified this part pursuant to a date DOE has selected consistent with the Congressional Review Act (5 U.S.C. 801–804) and any other applicable law, or the date on which DOE completes action on any timely-initiated administrative reconsideration, whichever is later.

* * * * *

Small duct, high velocity system means a heating and cooling product that contains a blower and indoor coil combination that:

(1) Is designed for, and produces, at least 1.2 inches of external static pressure when operated at the certified air volume rate of 220–350 CFM per rated ton of cooling; and

(2) When applied in the field, uses high velocity room outlets generally greater than 1000 fpm which have less than 6.0 square inches of free area.

* * * * *

Through-the-wall air conditioner and heat pump means a central air conditioner or heat pump that is designed to be installed totally or partially within a fixed-size opening in an exterior wall, and:

(1) Is manufactured prior to January 23, 2010;

(2) Is not weatherized;

(3) Is clearly and permanently marked for installation only through an exterior wall;

(4) Has a rated cooling capacity no greater than 30,000 Btu/hr;

(5) Exchanges all of its outdoor air across a single surface of the equipment cabinet; and

(6) Has a combined outdoor air exchange area of less than 800 square inches (split systems) or less than 1,210 square inches (single packaged systems) as measured on the surface described in paragraph (5) of this definition.

* * * * *

6. Section 430.32 of Subpart C is amended by revising paragraph (c) to read as follows:

§ 430.32 Energy and water conservation standards and effective dates.

* * * * *

(c) *Central air conditioners and central air conditioning heat pumps.* (1) Split system central air conditioners and central air conditioning heat pumps manufactured after January 1, 1992, and before January 23, 2006 , and single package central air conditioners and central air conditioning heat pumps manufactured after January 1, 1993, and before January 23, 2006 , shall have Seasonal Energy Efficiency Ratio and Heating Seasonal Performance Factor no less than:

Product class	Seasonal energy efficiency ratio	Heating seasonal performance factor
(i) Split systems	10.0	6.8
(ii) Single package systems	9.7	6.6

(2) Central air conditioners and central air conditioning heat pumps manufactured on or after January 23, 2006 , shall have Seasonal Energy Efficiency Ratio and Heating Seasonal Performance Factor no less than:

Product class	Seasonal energy efficiency ratio (SEER)	Heating seasonal performance factor (HSPF)
(i) Split system air conditioners	12	—
(ii) Split system heat pumps	12	7.4
(iii) Single package air conditioners ..	12	—
(iv) Single package heat pumps	12	7.4
(v)(A) Through-the-wall air conditioners and heat pumps—split system	10.9	7.1
(v)(B) Through-the-wall air conditioners and heat pumps—single package	10.6	7.0
(vi) Small duct, high velocity systems	10.0	[1] 6.8

[1] NAECA-prescribed value subject to amendment.

* * * * *

5. Section 430.34 is added to Subpart C to read as follows:

§ 430.34 Energy and water conservation standards amendments

The Department of Energy may not prescribe any amended standard which increases the maximum allowable energy use or, in the case of showerheads, faucets, water closets or urinals, the maximum allowable water use, or which decreases the minimum required energy efficiency of a covered product.

Appendix

[The following letters from Department of Justice will not appear in the Code of Federal Regulations.]

Department of Justice

Antitrust Division
A. Douglas Melamed
Acting Assistant Attorney General, Main Justice Building, 950 Pennsylvania Avenue NW., Washington, DC 20530–0001, (202) 514–2401/ (202) 616–2645 (f), antitrust@justice.usdoj.gov (internet), http://www.usdoj.gov (World Wide Web)

December 4, 2000.

Mary Anne Sullivan, General Counsel
Department of Energy
Washington, D.C. 20585

Dear General Counsel Sullivan: I am responding to your October 16, 2000 letter seeking the views of the Attorney General about the potential impact on competition of two proposed energy efficiency standards: one for clothes washers and the other for residential central air conditioners and heat pumps. Your request was submitted pursuant to Section 325(o)(2)(B)(i) of the Energy Policy and Conservation Act, 42 U.S.C. 6291, 6295 (''EPCA''), which requires the Attorney General to make a determination of the impact of any lessening of competition that is likely to result from the imposition of proposed energy efficiency standards. The Attorney General's responsibility for

responding to requests from other departments about the effect of a program on competition has been delegated to the Assistant Attorney General for the Antitrust Division in 28 CFR § 0.40(g).

We have reviewed the proposed standards and the supplementary information published in the **Federal Register** notices and submitted to the Attorney General, which include information provided to the Department of Energy by manufacturers. We have additionally conducted interviews with members of the industries.

We have concluded that the proposed clothes washer standard would not adversely affect competition. In reaching this conclusion, we note that the proposed standard is based on a joint recommendation submitted to the Department of Energy by manufacturers and energy conservation advocates. That recommendation states that virtually all manufacturers of clothes washers who sell in the United States participated in arriving at the recommendation through their trade association, that the recommendation was developed in consultation with small manufacturers, and that the manufacturers believe the new standard would not likely reduce competition. We note further that, as the industry recommended, the proposed standard will be phased in over six years, which will allow companies that do not already have products that meet the proposed standard sufficient time to redesign their product lines.

With respect to the proposed residential central air conditioner and heat pump standard, we have concluded that there could be an adverse impact on competition. The proposed standard, Trial Standard Level 3, is expressed in terms of two industry measurements: SEER (Seasonal Energy Efficiency Ratio) and HSPF (Heating Seasonal Performance Factor).[1] These standards would change from the current central air conditioner and heat pump efficiency standards of 10 SEER/6.8 HSPF for split system air conditioners and heat pumps and 9.7 SEER/6.6 HPSF for single package air conditioners and heat pumps to 12 SEER for air conditioners and 13 SEER/7.7 HPSF for heat pumps.

We have identified three possible competitive problems presented by the proposed standards. First, the proposed 13 SEER heat pump standard would have a disproportionate impact on smaller manufacturers. Currently less than 20 percent of the total current product lines meet the proposed standards, but for some small manufacturers, 100 percent of their product lines fail to satisfy the proposed standard.

[1] The **Federal Register** notice also requested comments on a proposal to adopt a standard for steady-state cooling efficiency (EER) and discussed several options the Department of Energy is considering. The proposed rule set forth in the notice does not, however, include a provision regarding an EER standard, and the views of Department of Justice expressed in this letter are limited to the impact of any lessening of competition * * * that is likely to result from the imposition of the [proposed] standard,'' as required by EPCA. If the Department of Energy proposes a rule in the future incorporating an EER standard, DOE will then evaluate that proposed rule and express its views about the competitive impact of that standard.

Second, the proposed standard for heat pumps, and in some instances for air conditioners, would have an adverse impact on some manufacturers of these products (including those products referred to in the **Federal Register** notice as ''niche products'') used to retrofit existing housing and used in manufactured housing. These manufacturers could not make units that comply with the rule and fit into the available space.

Third, the proposed heat pump standard of 13 SEER could make heat pumps less competitive with alternative heating and cooling systems. Because the standard will result in increases in the size and cost of heat pumps, it is possible that purchasers will shift away from heat pumps to other systems that include electric resistance heat, reducing the competition that presently exists between heat pumps and those other systems.

Department of Justice urges the Department of Energy to take into account these possible impacts on competition in determining its final energy efficiency standard for air conditioners and heat pumps. The Department of Energy should consider setting a lower SEER standard for heat pumps, such as the standard included in Trial Standard Level 2, and a lower SEER standard for air conditioners for retrofit markets where there are space constraints (such as markets served by niche products) and for manufactured housing.

Sincerely,
A. Douglas Melamed

Department of Justice

Antitrust Division
John M. Nannes
Acting Assistant Attorney General,
Main Justice Building, 950 Pennsylvania Avenue NW., Washington, DC 20530–0001, (202) 514–2401/ (202) 616–2645 (f), antitrust@justice.usdoj.gov (internet) http://www.usdoj.gov (World Wide Web)
April 5, 2001.

Eric J. Fygi,
Acting General Counsel, Department of Energy, Washington, DC 20585

Dear Acting General Counsel Fygi: I am responding to your letter dated March 20, 2001, seeking the views of the Attorney General about the potential effect on competition of the final rule published on January 22, 2001, setting forth new energy efficiency standards for central air conditioners and heat pumps. You specifically asked for our views about the impact on competition of the rule's prescription of a 13 SEER (Seasonal Energy Efficiency Rating) standard for all product classes, except for niche products, and the desirability of reducing the standard to a 12 SEER level for all subcategories. Your letter requested our views by March 30, but your staff agreed to extend the response date to Apri1 6.

As you noted in your letter to the Attorney General, the Antitrust Division had earlier expressed its views on the proposed rule, which provided for a 12 SEER standard for air conditioners and a 13 SEER standard for heat pumps. The Division had concluded that the 13 SEER standard for heat pumps could have an adverse effect on competition and urged the Department of Energy to adopt a 12 SEER standard for heat pumps. We noted only minor concerns about the proposed 12 SEER standard for air conditioners.

We have reviewed the final rule and determined that the 13 SEER heat pump standard still raises competitive problems. We have further determined that the 13 SEER standard for air conditioners also raises competitive concerns.

In our earlier letter, we identified and described three competitive problems resulting from the proposed 13 SEER standard for heat pumps, including a disproportionate impact on smaller manufacturers [2] and an adverse effect on manufacturers of specialized equipment (the niche product manufacturers) and manufacturers of equipment for space-constrained installation sites (such as manufactured housing, which accounts for a significant percentage of the country's housing starts). The exception made in the final rule for niche product manufacturers may alleviate competitive problems for their products, but the exception does not eliminate the difficulties for manufacturers of standard equipment who could not make equipment that complied with the 13 SEER standard and still fit into space-constrained sites. The final rule also continues to have a disproportionate impact on smaller manufacturers of heat pumps. The 13 SEER standard for air conditioners raises the same kinds of competitive problems as the 13 SEER standard does for heat pumps.

We urge the Department of Energy to consider the impact on competition and to adopt a 12 SEER standard for all products covered by the rule.

Sincerely,
John M. Nannes

Department of Justice

Antitrust Division
Charles A. James
Assistant Attorney General,
Main Justice Building, 950 Pennsylvania Avenue, NW., Washington, DC 20530–0001, (202) 514–2401 / (202) 616–2645 (f) antitrust@justice.usdoj.gov (internet) http://www.usdoj.gov (World Wide Web)
October 19, 2001

Lee Liberman Otis,
General Counsel, Department of Energy, Washington, DC 20585

Dear General Counsel Otis: I am responding to your August 15, 2001 letter seeking the views of the Attorney General about the potential impact on competition of proposed energy efficiency standards for residential central air conditioners and central air conditioning heat pumps. Your request was submitted pursuant to Section 325(o)(2)(B)(i) of the Energy Policy and Conservation Act, 42 U.S.C. 6291, 6295 (''EPCA''), which requires the Attorney General to make a determination of the impact of any lessening of competition that

[2] We noted in our previous letter that less than 20 percent of the total current heat pump product lines meet the new standard, but for some small manufacturers, 100 percent of their product lines failed to satisfy the standard. The same is true for air conditioner manufacturers when the standard is 13 SEER.

is likely to result from the imposition of proposed energy efficiency standards. The Attorney General's responsibility for responding to requests from other departments about the effect of a program on competition has been delegated to the Assistant Attorney General for the Antitrust Division in 28 CFR 0.40(g).

The proposal provides for 12 SEER standards for all types of residential central air conditioners and central air conditioning heat pumps, except those that are installed through an exterior wall. We have reviewed the materials that accompanied your August 15 letter, the materials that you previously provided, and the comments submitted to DOE, as well as the results of our industry interviews. Based on that review, we have concluded that the proposal would not adversely affect competition.

Sincerely,

Charles A. James

[FR Doc. 02–12680 Filed 5–22–02; 8:45 am]

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