Case Nos. 14-2147, 14-2159, and 14-2334 (consolidated)

IN THE
UNITED STATES COURT OF APPEALS
FOR THE SEVENTH CIRCUIT

ZERO ZONE, INC., AIR-CONDITIONING, HEATING AND REFRIGERATION INSTITUTE, AND NORTH AMERICAN ASSOCIATION OF FOOD EQUIPMENT MANUFACTURERS,

Petitioners,

v.

UNITED STATES DEPARTMENT OF ENERGY, et al.,

Respondents.

ON PETITION FOR REVIEW OF A REGULATION OF THE UNITED STATES DEPARTMENT OF ENERGY

Agency No. EERE-2010-BT-STD-0003

BRIEF OF PETITIONER NORTH AMERICAN ASSOCIATION OF FOOD EQUIPMENT MANUFACTURERS

Jeffrey S. Longsworth
BARNES & THORNBURG LLP
1717 Pennsylvania Avenue, N.W.
Suite 500
Washington, D.C. 20006-4623
Phone (202) 408-6918
FAX (202) 289-1330
jlongsworth@btlaw.com

Attorneys for Petitioner North American Association of Food Equipment Manufacturers

CIRCUIT RULE 26.1 DISCLOSURE STATEMENT FOR NORTH AMERICAN ASSOCIATION OF FOOD EQUIPMENT MANUFACTURERS

Appellate Court Nos: 14-2147, 14-2159, and 14-2334

Short Caption: *Zero Zone, Inc., et.al v. U.S. Department of Energy*

To enable the judges to determine whether recusal is necessary or appropriate, an attorney for a non-governmental party or amicus curiae, or a private attorney representing a government party, must furnish a disclosure statement providing the following information in compliance with Circuit Rule 26.1 and Fed. R. App. P. 26.1.

The Court prefers that the disclosure statement be filed immediately following docketing; but, the disclosure statement must be filed within 21 days of docketing or upon the filing of a motion, response, petition, or answer in this court, whichever occurs first. Attorneys are required to file an amended statement to reflect any material changes in the required information. The text of the statement must also be included in front of the table of contents of the party's main brief. **Counsel is required to complete the entire statement and to use N/A for any information that is not applicable if this form is used.**

[ ] PLEASE CHECK HERE IF ANY INFORMATION ON THIS FORM IS NEW OR REVISED AND INDICATE WHICH INFORMATION IS NEW OR REVISED.

(1) The full name of every party that the attorney represents in the case (if the party is a corporation, you must provide the corporate disclosure information required by Fed. R. App. P. 26.1 by completing the item #3): North American Association of Food Equipment Manufacturers.

(2) The names of all law firms whose partners or associates have appeared for the party in the case (including proceedings in the district court or before an administrative agency) or are expected to appear for the party in this court: Barnes & Thornburg LLP.

(3) If the party or amicus is a corporation:

i) Identify all its parent corporations, if any; and

N/A

ii) list any publicly held company that owns 10% or more of the party's or amicus' stock:

N/A

==========

Attorney's Signature: s/ Jeffrey S. Longsworth Date: May 8, 2015

Attorney's Printed Name: Jeffrey S. Longsworth

Please indicate if you are *Counsel of Record* for the above listed parties pursuant to Circuit Rule 3(d). Yes X No _

Address: Barnes & Thornburg, 1717 Pennsylvania Avenue, N.W., Suite 500, Washington, D.C. 20006-4623

Phone Number: (202) 408-6918 Fax Number: (202) 289-1330

E-Mail: jlongsworth@btlaw.com

Table of Contents

JURISDICTIONAL STATEMENT 1

STATEMENT OF ISSUES PRESENTED FOR REVIEW 2

STATEMENT OF THE CASE 4

I. Statutory Background on the Energy Policy and Conservation Act 4

A. DOE Must Consider Certain Factors in Establishing New Energy Efficiency Standards 5

B. DOE is Prohibited From Establishing New Energy Efficiency Standards in Contravention of the Statute 6

C. DOE's Regulations Establish a Process for Rulemakings Regarding New Energy Efficiency Standards 7

D. DOE's Rulemaking for Energy Conservation Standards for Commercial Refrigeration Equipment 8

E. DOE's Final Rule for Energy Conservation Standards for Commercial Refrigeration Equipment 9

F. Procedural Background to NAFEM's Appeal 10

SUMMARY OF ARGUMENT 10

STANDARD OF REVIEW 10

ARGUMENT 14

I. DOE Failed to Consider the Cumulative Regulatory Burden Imposed by Other Regulatory Activities that Also Affect Commercial Refrigeration Equipment 14

A. DOE Must Account for Cumulative Regulatory Burdens 15

B. DOE Knew that the Only Two Refrigerants Used in its Model Face Elimination 18

C. DOE Should Have Modeled Other Refrigerants Based on the Likelihood that R-134a and R-404a Would be Unavailable and Adjusted the Final Rule Accordingly 21

D. DOE Failed to Properly Evaluate the Impacts of This Rule on ENERGY STAR 23

II. DOE's Failure to Consider Interplay Between Product Categories Undermines any Determination that Overall Improved Energy Conservation Would Result from the New Standards 25

A. The New Requirements Encourage Substituting Equipment that is Less Energy Efficient 26

B. National Impacts Analysis is Flawed Because Shipments Analysis Does Not Account for Customer Purchasing Behavior 31

III. DOE's Rule is Based on a Flawed Engineering Analysis 35

A. Engineering Spreadsheet Provides no Way for a Regulated Entity to Assess Impacts of New Standards on their Products 37

B. Engineering Spreadsheet was not Properly Validated 39

C. Engineering Spreadsheet Uses Flawed Inputs 42

1. Offsets 43

2. Compressors 45

3. Insulation Foam Thickness 48

IV. DOE Failed to Properly Address the Impacts of the New Standards on Small Businesses 51

CONCLUSION 53

CERTIFICATE OF SERVICE 54

CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITATION, TYPEFACE REQUIREMENTS, AND TYPE STYLE REQUIREMENTS 55

CIRCUIT RULE 30(d) CERTIFICATION 1

RULE 30(a) APPENDIX 2

TABLE OF AUTHORITIES

Cases

Air Line Pilots Ass'n v. FAA,
3 F.3d 449 (D.C. Cir. 1993) 45, 47

Alenco Commc'ns, Inc. v. FCC,
201 F.3d 608 (5th Cir. 2000) 51

ALLTEL Corp. v. FCC,
838 F.2d 551 (D.C. Cir. 1988) 21, 45

Associated Fisheries, Inc. v. Daley,
127 F.3d 104 (1st Cir.1997) 51

BCCA Appeal Grp. v. U.S. E.P.A.,
355 F.3d 817 (5th Cir. 2003) 39

Chem. Mfrs. Ass'n v. EPA,
885 F.2d 253 (5th Cir. 1989) 34

Chevron U.S.A. Inc. v. Natural Resources Defense Council,
467 U.S. 837 (1984) 12

Columbia Falls Aluminum Co. v. EPA,
139 F.3d 914 (D.C. Cir. 1998) 42

Eagle–Picher Indus., Inc. v. EPA,
759 F.2d 905 (D.C.Cir.1985) 42

Fertilizer Institute v. EPA,
935 F. 2d 1303 (D.C. Cir. 1991) 48

Friends of the Earth, Inc. v. Laidlaw Environmental Services, Inc.,
528 U.S. 167 (2000) 2

Lee Lumber and Building Material Corp. v. National Labor Relations Board,
117 F.3d 1454 (D.C. Cir. 1997) 21, 47

Medicines Co. v. Kappos,
699 F. Supp. 2d 804 (E.D. Va. 2010) 47

Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto Ins. Co.,
463 U.S. 29 (1983) 12, 13, 33

National Min. Ass'n v. Mine Safety & Health Admin.,
116 F. 3d 520 (D.C. Cir. 1997) 48

Nat'l Ass'n of Psychiatric Health Sys. v. Shalala,
120 F. Supp. 2d 33 (D.D.C. 2000) 53

NRDC v. Herrington,
768 F.2d 1355 (D.C. Cir. 1985) 33

Owner-Operator Indep. Drivers Ass'n, Inc. v. Fed. Motor Carrier Safety Admin.,
656 F.3d 580 (7th Cir. 2011) 13, 34, 51

Prometheus Radio Project v. FCC,
373 F.3d 372 (3d Cir. 2004) 30

Public Citizen v. Fed. Motor Carrier Safety Admin.,
374 F.3d 1209 (D.C. Cir. 2004) 13

Public Citizen, Inc. v. Mineta,
340 F.3d 39 (2d Cir. 2003) 12

Schurz Commc'ns, Inc. v. FCC,
982 F.2d 1043 (7th Cir. 1992) 13

St. James Hospital v. Heckler,
760 F.2d 1460 (7th Cir. 1985) 13

Texas Oil & Gas Ass'n v. EPA,
161 F.3d 923 (5th Cir. 1998) 45

United States v. Nova Scotia Food Products Corp.,
568 F.2d 240 (2d Cir. 1977) 39

Statutes

5 U.S.C. § 551 12
5 U.S.C. § 603(c) 51
5 U.S.C. § 604 10
5 U.S.C. § 604(a)(6) 52, 53
5 U.S.C. § 706(2)(A), (C)-(D) 12
5 U.S.C. § 706(C)-(D) 39
5 U.S.C. §§ 601-612 3
42 U.S.C. § 6295 1
42 U.S.C. § 6295(b) 5
42 U.S.C. § 6295(m) 5
42 U.S.C. § 6295(o) 15
42 U.S.C. § 6295(o)(1) 5
42 U.S.C. § 6295(o)(2)(A) 5, 25
42 U.S.C. § 6295(o)(2)(B)(i) 5, 6, 25
42 U.S.C. § 6295(o)(3) 6, 25
42 U.S.C. § 6295(o)(3)(B) 25, 30
42 U.S.C. § 6295(o)(B)(i) 29
42 U.S.C. § 6306(b)(1) 10
42 U.S.C. § 6306(b)(1)–(2) 1, 2, 4
42 U.S.C. § 6316(e)(1) 5, 6, 25, 30
42 U.S.C. §§ 6291-6309 4
42 U.S.C. §§ 6311-6317 5

Rules

10 C.F.R. Part 430 ..... 7, 8, 9, 15, 21, 22, 49
74 Fed. Reg. 1,092 8
76 Fed. Reg. 3,821 15
78 Fed. Reg. 55,890 ..... 4, 8
78 Fed. Reg. 55,892 8
78 Fed. Reg. 55,918 18
78 Fed. Reg. 55,919 23
79 Fed. Reg. 17,225 ..... 1, 4, 9
79 Fed. Reg. 17,727 ..... 35, 43
79 Fed. Reg. 17,727-28 9
79 Fed. Reg. 17,728 27
79 Fed. Reg. 17,739 23
79 Fed. Reg. 17,739, n.4 23
79 Fed. Reg. 17,740 ..... 9, 23
79 Fed. Reg. 17,743 ..... 44, 45
79 Fed. Reg. 17,745 ..... 9, 46, 49
79 Fed. Reg. 17,748 48
79 Fed. Reg. 17,749 ..... 48, 49

79 Fed. Reg. 17,750 50
79 Fed. Reg. 17,754 ..... 16, 20
79 Fed. Reg. 17,760 46
79 Fed. Reg. 17,770 ..... 32, 33, 34
79 Fed. Reg. 17,797 20
79 Fed. Reg. 17,798 25
79 Fed. Reg. 17,812-14 53
79 Fed. Reg. 17,814 ..... 10, 51
79 Fed. Reg. 46,126, 46,134 17
79 Fed. Reg. 55,889, 55,987-988 19

Miscellaneous

Exec. Order No. 13,563, *Improving Regulation and Regulatory Review,* 15

Memorandum for the Heads of Executive Departments and Agencies on Cumulative Effects of Regulations, Case R. Sunstein, Administrator, Office of Information and Regulatory Afairs (March 20, 2012) *available at:* https://www.whitehouse.gov/sites/default/files/omb/assets/inforeg/cumulative-effects-guidance.pdf 15

President's June 2013 Climate Action Plan ("The President's Climate Action Plan," June 2013, *available at:* https://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf (last accessed May 4, 2015) 14

SBA Office of Advocacy, *A Guide for Government Agencies. How to Comply with the Regulatory Flexibility Act,* 40 (2012), *available at:* https://www.sba.gov/sites/default/files/rfaguide_0512_0.pdf 16

JURISDICTIONAL STATEMENT

This Court has jurisdiction over the North American Association of Food Equipment Manufacturers' ("NAFEM") Petition under Energy Policy and Conservation Act ("EPCA") section 306:

> (1) Any person who will be adversely affected by a rule prescribed under section 6293, 6294, or 6295 of this title may, at any time within 60 days after the date on which such rule is prescribed, file a petition with the United States court of appeals for the circuit in which such person resides or has his principal place of business, for judicial review of such rule. . . .
>
> (2) Upon the filing of the petition referred to in paragraph (1), the court shall have jurisdiction to review the rule in accordance with chapter 7 of title 5 and to grant appropriate relief as provided in such chapter. No rule under section 6293, 6294, or 6295 of this title may be affirmed unless supported by substantial evidence.

42 U.S.C. § 6306 (b)(1)–(2).

NAFEM petitioned for review of the Department of Energy's ("DOE") promulgation of energy efficiency standards for commercial refrigeration equipment ("CRE") pursuant to the EPCA (the "Final Rule"). Doc. # 104[1] (Final Rule), 79 Fed. Reg. at 17,225 (March 28, 2014); 42 U.S.C. § 6295. Venue is proper because NAFEM and its members conduct and transact business in Illinois, Wisconsin, and Indiana.

NAFEM has standing as an organization representing its members, whose businesses are directly affected by DOE's Final Rule. NAFEM's members include

[1] Citations to the CRE rulemaking docket appear in this brief as "Doc. # ____ at [page number]."

companies located throughout the United States that manufacture commercial refrigeration equipment and must have their products comply with the energy efficiency standards promulgated by DOE. The energy efficiency standards being challenged directly affect NAFEM's members' design and construction of the products they sell in the marketplace. Thus, the Petitioner has organizational standing to represent its members, who are injured by the Final Rule. *See Friends of the Earth, Inc. v. Laidlaw Environmental Services, Inc.,* 528 U.S. 167, 181 (2000).

NAFEM timely filed its Petition on May 23, 2014, within the 60-day period beginning on March 28, 2014. 42 U.S.C. § 6306(b)(1)–(2).

STATEMENT OF ISSUES PRESENTED FOR REVIEW

(1) Did DOE violate its Process Rule when it failed to consider the cumulative regulatory burden imposed by the Environmental Protection Agency's ("EPA") regulatory activities that will result in changes to refrigerant types allowed for use in Commercial Refrigeration Equipment?

(2) Did DOE violate its Process Rule when it failed to consider the cumulative regulatory burden between this CRE Final Rule and ENERGY STAR, an energy efficiency program also administered by DOE, in conjunction with EPA?

(3) Did DOE violate its statutory mandate under the EPCA by only evaluating energy savings for each product category in isolation when, given a choice between products in two different categories, the energy

efficiency standards encourage the use of products from categories that allow more energy use?

(4) Did DOE violate its statutory mandate under the EPCA by only evaluating energy savings for each product category in isolation and not evaluating customer behavior that would result from the new standards, the associated market impacts and whether this would negate any energy conservation benefits from the standards as a whole?

(5) Did DOE's Final Rule fail to provide adequate public participation under the EPCA and the Administrative Procedure Act ("APA") when its Engineering Spreadsheet did not allow manufacturers to evaluate how their equipment would perform in the same analyses and to verify the accuracy of DOE's calculations and conclusions?

(6) Whether DOE's Final Rule is arbitrary and capricious because it was based on an engineering model that was not properly validated?

(7) Whether DOE's Final Rule is arbitrary and capricious because it failed to adequately adjust inputs into its Engineering Spreadsheet and failed to properly respond to comments?

(8) Did DOE fail to conduct a proper analysis under the Regulatory Flexibility Act, 5 U.S.C. §§ 601-612 for the Final Rule?

STATEMENT OF THE CASE

This case involves NAFEM's Petition for Review challenging DOE's Final Rule for Energy Efficiency Standards for Commercial Refrigeration Equipment. Doc # 104 (Final Rule), 79 Fed. Reg. at 17,225. On September 11, 2013, DOE published a notice of proposed rulemaking ("NOPR"). Doc. # 52 (NOPR), 78 Fed. Reg. at 55,890. On March 26, 2014, DOE issued the Final Rule. Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,225. On May 28, 2014, NAFEM timely filed its Petition for Review pursuant to EPCA section 306, § 42 U.S.C. § 6306(b)(1)–(2). On May 27, 2014, Zero Zone, Inc. and the Air Conditioning, Heating, and Refrigeration Institute ("AHRI") filed their challenge to the Final Rule, and NAFEM adopts the arguments in their brief challenging the CRE Rule.[2]

I. Statutory Background on the Energy Policy and Conservation Act

Following the 1973 Organization of Oil Producing and Exporting Countries oil embargo, Congress passed the EPCA, Pub. L. 94–163 (1975), which set forth provisions to force improved energy efficiency in certain consumer products. In particular, the EPCA established an "Energy Conservation Program for Consumer Products Other than Automobiles." 42 U.S.C. §§ 6291-6309. Shortly thereafter, in 1978, Congress passed the National Energy Conservation Policy Act ("NECPA"), Pub. L. 95-619, which amended the EPCA to establish an energy conservation

[2] They also filed a challenge to the Test Procedures Rule, EERE-2013-BT-TP-0025, which has been consolidated with the CRE challenges but for which NAFEM did not file a petition.

program for certain industrial equipment, in addition to the consumer products already subject to regulation. 42 U.S.C. §§ 6311-6317.[3]

The statute requires DOE, which implements the Energy Conservation Program, to establish energy efficiency standards for commercial refrigeration equipment, including refrigerators, refrigerator-freezers and freezers. *See* 42 U.S.C. §§ 6295(b), 6316(e)(1). Every six years, DOE may amend the energy efficiency standards for a given class of equipment or determine that no amendment is necessary. 42 U.S.C. § 6295(m).

A. DOE Must Consider Certain Factors in Establishing New Energy Efficiency Standards

In establishing a new energy efficiency standard, DOE must follow certain statutory mandates. First, new standards may not increase the maximum allowable energy use. 42 U.S.C. § 6295(o)(1). Second, any new or amended energy conservation standard must be "designed to achieve the maximum improvement in energy efficiency" that is both "technologically feasible and economically justified." 42 U.S.C. § 6295(o)(2)(A).

A proposed standard is economically justified if "the benefits of the standard exceed its burdens." 42 U.S.C. §§ 6295(o)(2)(B)(i), 6316(e)(1). DOE must make this determination by considering the following seven factors:

[3] Subsequent Congressional amendments to the EPCA provisions for industrial equipment occurred in 1992 (Energy Policy Act of 1992, Pub. L. 102-486), 2005 (Energy Policy Act of 2005, Pub. L. 109-58), and 2007 (Energy Independence and Security Act of 2007, Pub. L. 110-140).

1. the economic impact of the standard on manufacturers and consumers of the equipment subject to the standard;

2. the savings in operating costs throughout the estimated average life of the covered equipment in the type (or class) compared to any increase in the price, initial charges, or maintenance expenses for the covered equipment that are likely to result from the imposition of the standard;

3. the total projected amount of energy, or as applicable, water, savings likely to result directly from the imposition of the standard;

4. any lessening of the utility or the performance of the covered equipment likely to result from the imposition of the standard;

5. the impact of any lessening of competition, as determined in writing by the U.S. Attorney General, that is likely to result from the imposition of the standard;

6. the need for national energy and water conservation; and

7. other factors the DOE considers relevant.

42 U.S.C. §§ 6295(o)(2)(B)(i)(I)–(VII), 6316(e)(1).

B. DOE is Prohibited From Establishing New Energy Efficiency Standards in Contravention of the Statute

DOE is prohibited from amending or adding a new standard in certain situations. First, DOE may not prescribe an amended or new standard if it determines that such standard will not result in significant energy conservation or that the establishment of such standard is not technologically feasible or economically justified. 42 U.S.C. § 6295(o)(3). Second, DOE may not prescribe an amended or new standard if it finds that "interested persons have established by a preponderance of the evidence that the standard is likely to result in the unavailability in the United States in any covered product type (or class) of performance characteristics (including reliability), features, sizes, capacities, and

volumes that are substantially the same as those generally available in the United States at the time of the finding." 42 U.S.C. § 6295(o)(4).

C. DOE's Regulations Establish a Process for Rulemakings Regarding New Energy Efficiency Standards

DOE has promulgated process regulations for developing new or revised efficiency standards under the EPCA. 10 C.F.R. Part 430, Appendix A, Subpart C. One of the objectives of this "Process Rule" is to "use qualitative and quantitative analytical methods that are fully documented for the public and that produce results that can be explained and reproduced, so that the analytical underpinnings for policy decisions on standards are as sound and well-accepted as possible." *Id.* at 1(g).

The Process Rule directs DOE to consider the cumulative impacts of other regulations that affect or will affect the target industry. Specifically, it requires:

> (1) The Department will recognize and seek to mitigate the overlapping effects on manufacturers of new or revised DOE standards and other regulatory actions affecting the same products. DOE will analyze and consider the impact on manufacturers of multiple product-specific regulatory actions. These factors will be considered in setting rulemaking priorities, assessing manufacturer impacts of a particular standard, and establishing the effective date for a new or revised standard. In particular, DOE will seek to propose effective dates for new or revised standards that are appropriately coordinated with other regulatory actions to mitigate any cumulative burden.
>
> (2) If the Department determines that a proposed standard would impose a significant impact on product manufacturers within three years of the effective date of another DOE standard that imposes significant impacts on the same manufacturers (or divisions thereof, as appropriate), the Department will, in addition to evaluating the impact on manufacturers of the proposed standard, assess the joint impacts of both standards on manufacturers.

10 C.F.R. Part 430, Appendix A to Subpart C at 10(g).

D. DOE's Rulemaking for Energy Conservation Standards for Commercial Refrigeration Equipment

Historically, CRE energy efficiency standards were established by two statutes, the Energy Policy Act of 2005 and the American Energy Manufacturing Technical Corrections Act, and by DOE's January 9, 2009, final rule prescribing standards pursuant to the EPCA (74 Fed. Reg. at 1,092).

DOE began developing the revised standards at issue as early as April 30, 2010, when it issued a "Framework" to revise the standards. Doc. # 2. After meeting with certain stakeholders and collecting information, on September 11, 2013, DOE published a NOPR for revised commercial refrigeration equipment energy efficiency standards. Doc. # 52 (NOPR) 78 Fed. Reg. at 55,890. In the NOPR, DOE proposed new or amended energy efficiency standards for 49 "classes" of commercial refrigeration equipment. *Id.* at 55,892. DOE also developed a technical support document ("TSD") for the proposed rule, which it made available in the rulemaking docket. Doc. # 51 (Preliminary TSD).

Less than one month later, on October 3, 2013, DOE held a public meeting in Washington D.C. to solicit oral comments on the NOPR. *See* Doc. # 55, 56, 57. NAFEM, among others, submitted comments on the NOPR. Doc. # 93-A1.

E. DOE's Final Rule for Energy Conservation Standards for Commercial Refrigeration Equipment

On March 28, 2014, DOE published the Final Rule for Energy Conservation Standards for Commercial Refrigeration Equipment. Doc. # 104 (Final Rule); 79 Fed. Reg. at 17,725. In the rule, DOE finalized energy efficiency standards for the 49 classes of commercial refrigeration equipment. *Id.* at 17,727-28. These classes are unique to DOE's regulations and differ from categories in a related federal energy efficiency program—ENERGY STAR. *Id.* at 17,740.

As part of issuing the Final Rule, DOE also published final versions of its supporting engineering and economic evaluations. *See* 10 C.F.R. Part 430, Subpart C, Appendix A; *see also* 79 Fed. Reg. at 17,745. DOE hired Navigant Consulting, Inc. to help conduct those evaluations, many of which are documented in the Final TSD. *See* Doc. # 102 (Final TSD). The Final TSD includes, among others, information about DOE's Engineering Analysis, which, together with the Engineering Spreadsheet (Doc. # 98), establishes the relationship between manufacturer selling price and energy consumption for the commercial refrigeration equipment directly examined in this rulemaking. *Id.* at Chapter 5. It also includes DOE's National Impact Analysis ("NIA"), which is performed to help DOE understand the Final Rule's energy savings and financial impact on customers as required by the Process Rule. *See id.* at Chapter 10; *see also, id.* at 2-1 (with overall list of analyses performed as part of the ruling-making). Incorporated into the National Impact Analysis is a "Shipments Analysis" that evaluates future

shipments of commercial refrigeration equipment to customers. *Id.* at Chapter 9. Additionally, the TSD includes information about DOE's Manufacturer Impact Analysis (*id.* at Chapter 12), which incorporates an evaluation of the rule under the Regulatory Flexibility Act, 5 U.S.C. § 604, required for this rule because "[s]mall firms would likely be at a disadvantage relative to larger firms in meeting the amended energy conservation standard for commercial refrigeration equipment." Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,814.

F. Procedural Background to NAFEM's Appeal

The Final Rule was promulgated and published on March 28, 2014. NAFEM timely filed its Petition for Review on May 23, 2014 pursuant to 42 U.S.C. § 6306(b)(1). The Court also consolidated related appeals filed by Petitioners Zero Zone, Inc. and AHRI by Order dated July 10, 2014.

SUMMARY OF ARGUMENT

The commercial refrigeration manufacturing industry is highly competitive, complex, and innovative. Even the many small business participants must be able to address complex engineering challenges, customer demands, and unyielding government regulation addressing every aspect of production, maintenance, and performance. Throughout this rulemaking, DOE faced similar complex challenges, received many sophisticated but critical industry comments that questioned DOE's process and its resulting standards. Every individual decision impacts multiple other issues, creating new challenges and additional decisions that must be made in

conjunction with other equally important considerations. Regardless of these challenges, Congress has demanded DOE set appropriate energy conservation standards and DOE must do so with the level of sophistication and understanding to make the final energy conservation standards technologically feasible and economically justified.

Although the issues, and interactions between issues, are highly complex, DOE often reverts to a strategy that is unreasonably simplistic and too often ignores related impacts or conflicts, to the detriment of industry and perhaps to achieving energy conservation. For example, DOE requested in the NOPR information about the allowed refrigerants (critical materials in CRE products) upon which DOE exclusively relied in this rulemaking, but then in the Final Rule completely ignored the potential impacts of EPA's current rulemaking that will affect those same refrigerants. Also, DOE analyzed product categories in isolation and ignored, even in the face of many industry comments, questions about the interplay between the categories, especially as it relates to customer choices and eventual energy savings. Further, when faced with technical criticisms about the inputs to and validation of its Engineering Spreadsheet, DOE provided illogical or overly-simplistic responses that glossed over the real issues and concerns. DOE responds to many of these questions and challenges by either dismissing them as undeserving of a response based on fact, or ignoring the facts completely, beginning conclusory responses with "DOE believes. . ." as justification when it otherwise has no data to support its

conclusion. DOE's overall approach has been arbitrary and capricious and this Court should remand the Final Rule.

STANDARD OF REVIEW

Petitioner challenges the Final Rule because it violates the EPCA and the APA, 5 U.S.C. § 551, *et seq*. For claims that the Final Rule violates the EPCA, *Chevron U.S.A. Inc. v. Natural Resources Defense Council*, 467 U.S. 837 (1984) applies. *See also Public Citizen, Inc. v. Mineta,* 340 F.3d 39, 53 (2d Cir. 2003). If Congress has "directly spoken to the precise question at issue" and "the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress." *Chevron,* 467 U.S. at 842-43.

For claims that the Final Rule violates the APA, the Court must invalidate the rule if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;" "in excess of statutory jurisdiction, authority, or limitations, or short of statutory right;" or "without observance of procedure required by law." 5 U.S.C. § 706(2)(A), (C)-(D).

An agency rule is arbitrary and capricious if the agency "entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise." *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 43 (1983). "When Congress requires an agency to address something before issuing a

regulation, that factor is by definition an important aspect of the problem." *Owner-Operator Indep. Drivers Ass'n, Inc. v. Fed. Motor Carrier Safety Admin.*, 656 F.3d 580, 587 (7th Cir. 2011) (internal citations omitted). Failure to address a factor mandated by statute is "'sufficient to establish an arbitrary-and-capricious decision requiring vacatur of the rule.'" *Id.* (quoting *Public Citizen v. Fed. Motor Carrier Safety Admin.,* 374 F.3d 1209, 1216 (D.C. Cir. 2004).

Moreover, DOE must "articulate a reason for its action that demonstrates a 'rational connection between the facts found and the choice made.'" *Owner-Operator Indep. Drivers Ass'n, Inc., 656 F.3d at 587* (quoting *State Farm*, 463 U.S. at 43); *see also Schurz Commc'ns, Inc. v. FCC, 982 F.2d 1043, 1049-50* (7th Cir. 1992), modified (Dec. 7, 1992) ("It is not enough that a rule might be rational; the statement accompanying its promulgation must show that it is rational—must demonstrate that a reasonable person upon consideration of all the points urged pro and con the rule would conclude that it was a reasonable response to a problem that the agency was charged with solving."); *St. James Hospital v. Heckler*, 760 F.2d 1460, 1470 (7th Cir. 1985) (finding the Government violated APA Section 553(c) in a Medicare rule because the rule's "statement of basis and purpose provided no indication of why criticisms of [a relied upon study] were deemed invalid, and failed to give a reasoned response to other criticisms of the Rule.").

ARGUMENT

I. DOE Failed to Consider the Cumulative Regulatory Burden Imposed by Other Regulatory Activities that Also Affect Commercial Refrigeration Equipment

DOE's CRE standards do not become effective until 2017. Thus, DOE is obligated to consider technologies, materials, and refrigerants (in particular) that will be available to manufacturers in 2017. Here, DOE has relied exclusively on two refrigerants (R-134a and R-404a) that it knows are unlikely to be available to the industry or the marketplace in 2017 or, at the very least, will not represent the only relevant refrigerants that should be used by DOE to set the standards. More importantly, DOE knows that certain more environmentally friendly refrigerants are available and will be available (if not predominant) in 2017, but it refused to revise its model to address the different energy demands associated with those refrigerants, compressor requirements related to those refrigerants, costs, or the functionality of its final standards with different refrigerants. Faced with the likely use limitations on R-134a and R-404a and the assured availability of alternative refrigerants in 2017, DOE's failure to model any other refrigerant other than R-134a or R-404a was arbitrary and capricious.

DOE wrongfully has refused to recognize the significant impacts on its Final Rule that will directly result from the President's June 2013 Climate Action Plan ("The President's Climate Action Plan," June 2013, *available at*: https://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf (last accessed May 4, 2015)), related EPA regulations designed to limit the availability of the R-134a and R-404a relied upon by DOE in setting the CRE

standards in the Final Rule, and comments from the industry that DOE's sole reliance on those refrigerants was illogical, arbitrary, and capricious. DOE's actions also are contrary to its statutory obligations and its own Process Rule. *See* 42 U.S.C. § 6295(o), 10 C.F.R. Part 430 Appendix A to Subpart C.

Additionally, DOE failed to evaluate the CRE standards in the Final Rule in light of the joint DOE/EPA ENERGY STAR program.

A. DOE Must Account for Cumulative Regulatory Burdens

The Process Rule, along with other requirements, directs DOE to consider cumulative impacts of other regulations that affect, or will affect, the target industry. 10 C.F.R. Part 430, Appendix A to Subpart C at 10(g). *See also* Exec. Order No. 13,563, *Improving Regulation and Regulatory Review*, 76 Fed. Reg. at 3,821 (Jan. 21, 2011) ("Some sectors and industries face a significant number of regulatory requirements, some of which may be redundant, inconsistent, or overlapping. Greater coordination across agencies could reduce these requirements, thus reducing costs and simplifying and harmonizing rules. In developing regulatory actions and identifying appropriate approaches, each agency shall attempt to promote such coordination, simplification, and harmonization."); *Memorandum for the Heads of Executive Departments and Agencies on Cumulative Effects of Regulations*, Case R. Sunstein, Administrator, Office of Information and Regulatory Affairs (March 20, 2012) *available at* https://www.whitehouse.gov/sites/default/files/omb/assets/inforeg/cumulative-effects-guidance.pdf (directing agencies "[t]o promote consideration of cumulative effects, and to reduce redundant,

overlapping, and inconsistent requirements, agencies should carefully consider the following steps, where appropriate and feasible, and to the extent permitted by law: . . . [c]oordination of timing, content, and requirements of multiple rulemakings that are contemplated for a particular industry or sector, so as to increase net benefits . . . .").

The Small Business Administration ("SBA") publishes the *RFA Guide for Government Agencies* as a tool for federal agencies to use to follow the requirements of the Regulatory Flexibility Act and related law and executive orders. The guide explains that "[r]ules are conflicting when they impose two conflicting regulatory requirements on the same classes of industry." SBA Office of Advocacy, *A Guide for Government Agencies, How to Comply with the Regulatory Flexibility Act*, 40 (2012), *available at:* https://www.sba.gov/sites/default/files/rfaguide_0512_0.pdf. DOE and EPA regulatory activities conflict because DOE relied on exclusive use of the same refrigerants in modeling the standards in the Final Rule while EPA is working to replace those same refrigerants with other alternatives not considered by DOE.

EPA has been pressured to remove use of R-134a since at least 2010. DOE recognized during the CRE rule comment period, "the refrigerants modeled in the analysis, R404 and R134a, [were] both . . . being reviewed by the EPA Significant New Alternatives Policy (SNAP) program for possible removal from commercial refrigeration applications." Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,754. "SNAP" is the EPA's program to reduce ozone-depleting chemicals pursuant to the Clean Air

Act and the Montreal Protocol. *See* Protection of Stratospheric Ozone, 79 Fed. Reg. at 46,126, 46,134 (proposed Aug. 6, 2014)(describing various APA petitions by citizen groups dating back to 2010 seeking rulemakings to limit use of various refrigerants including R-134a). While EPA was considering such petitions, the President announced his Climate Action Plan to, inter alia, direct the federal government to further reduce emissions of the class of refrigerants that include R-404a and R-134a. *Id.* EPA's response to the President's plan and APA petitions was to propose limitations and/or outright bans on certain uses of R-134a and R-404a, and promote other refrigerants identified as "next generation" alternatives and substitutes currently available in the marketplace. *Id.*

EPA has proposed limiting R-134a and R-404a by 2016. There is no doubt that EPA's SNAP rulemaking and DOE's CRE standards are impacting, conflicting and cumulative on the commercial refrigeration industry – especially when EPA's rule would restrict or eliminate R-134a and R-404a while DOE's CRE rule relies exclusively on the use of those refrigerants to set energy conservation standards effective after the proposed effective date of EPA's regulation. Throughout much of DOE's rulemaking, DOE has recognized these facts, requested and received comments about the cumulative impacts of the CRE rulemaking and EPA's SNAP rulemaking, and then arbitrarily dismissed the entire issue in its Final Rule.

B. DOE Knew that the Only Two Refrigerants Used in its Model Face Elimination

DOE knew, or should have known, of the federal government's actions – EPA's SNAP rulemaking and the President's Climate Action Plan – to replace or restrict R-134a and R-404a prior to proposing and finalizing its CRE standards. In response, DOE logically should have at least modeled other available refrigerants that it knew would be available to the industry in 2017. Instead, DOE attempted to oversimplify the regulatory playing field, which allowed it to ignore that refrigerants other than R-134a and R-404a are likely to be more expensive to use in 2017 and beyond. In this way, DOE performed an unrealistic analysis of both the cost and feasibility issues the EPCA requires it to address.

DOE initially attempted in its NOPR and Preliminary TSD to address the SNAP cumulative impacts by recognizing the potential impacts on its model and final standards associated with replacing R-134a and R-404a. The NOPR discusses EPA's obligations and efforts "to evaluate and regulate substitutes for the ozone-depleting chemicals that are being phased out under the stratospheric ozone protection provisions of the Clean Air Act." Doc. # 52, (NOPR) 78 Fed. Reg. at 55,918; *see also* Doc. # 51 (Preliminary TSD) at 2-31 (discussing possible restrictions on refrigerants). In fact, DOE specifically requested comments on other refrigerants in its NOPR by acknowledging "DOE based its analysis on refrigeration equipment using R-404A and R-134a, HFC refrigerants widely used in the commercial refrigeration industry" and then seeking input "as to the impacts of

alternative refrigerants to the refrigeration system in this rulemaking." Doc. # 52 (NOPR), 79 Fed. Reg. at 55,889, 55,987-988.

DOE received numerous written comments reporting EPA's specific intent to restrict R-134a and R-404a. *See e.g.,* Doc. # 76-A1 (True Comments) at 3, Doc. # 73-A1 (Lennox Comments) at 5, and Doc. # 65-A1 (Traulsen Comments) at 18. DOE also engaged in discussions with industry experts during its October 3, 2013 public meeting. *See* Doc. # 55, 56, 57. DOE staff asked for test data on alternative refrigerants (post NOPR). *See* Doc. # 62 (Public Meeting Transcript) at 124 ("Mr. Cymbalsky [DOE]: So can you guys provide your test data that you have on the alternate refrigerants to the Department? Mr. Cousins [Coca Cola]: I would be glad to do that."). Clearly, DOE (and its contractor, Navigant) recognized the potential impact of EPA regulations and the need to consider conversion to other refrigerants. *Id.* at 41 (after discussion about alternative refrigerant use and EPA SNAP regulatory activity, Navigant's representative states, "That's definitely been a point of discussion. And we are going to potentially solicit comment on refrigerants a little bit later.").

Then, DOE ceased recognizing any potential impacts or limitations on R-134a or R-404a that might result from these other regulatory actions. DOE's approach evolved from recognizing: (1) EPA was obligated to further regulate R-134a and R-404a before 2017; (2) it had requested comments and data on alternative refrigerants as a direct result; (3) the President's Climate Action Plan would pressure DOE and other agencies (such as EPA) to support substituting more

environmentally friendly refrigerants for R-134a and R-404a; and (4) recognition that "many low-GWP refrigerants are being introduced to the market, and [DOE] wishes to ensure that this [CRE] rule is consistent with the phase-down of HFCs proposed by the United States under the Montreal Protocol" (*see* Doc. #104 (Final Rule), 79 Fed. Reg. at 17,754), to a final approach to setting standards that ignored all of the above and relied exclusively on R-134a and R-404a as the refrigerants in its standard model for 2017 implementation.

This remarkable about face in its Final Rule resulted in DOE's illogical final conclusion that because there were no final "actionable data" that specifically restrict R-134a and R-404a usage (presumably on March 28, 2014, the date of the Final Rule), DOE was somehow otherwise justified in relying on those two refrigerants to set 2017 standards. Conversely, all the evidence before it supports an opposite conclusion.

DOE further left out that it solicited information about those refrigerants and, inappropriately asserted that it only evaluated the cumulative regulatory burdens raised in limited industry interviews. Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,797 ("In interviews, manufacturers cited Federal regulations on certification, on walk-in cooler and freezer equipment, and from ENERGY STAR as contributing to their cumulative regulatory burden."). As discussed above, numerous stakeholders commented on this refrigerant issue. It is inexplicable why DOE would state it is relying only on interview information and ignore the body of comments received at its public meeting and submitted in writing.

Such an approach violates DOE's own Process Rule (*see* Process Rule, 10 C.F.R. Part 430, Subpart C to Appendix A at 10(g)(1)), and violates the APA by completely ignoring the information in record. *See, e.g., Lee Lumber and Building Material Corp. v. National Labor Relations Board,* 117 F.3d 1454, 1460 (D.C. Cir. 1997) (finding agency decision arbitrary where "clear and fundamental inconsistency" existed in agency's reasoning and agency failed to explain inconsistency)*; ALLTEL Corp. v. FCC*, 838 F.2d 551, 558 (D.C. Cir. 1988) (cannot ignore comments that challenge assumptions and "must come forward with some explanation that its view is based on some reasonable analysis."). Whether or not manufacturers responded in interviews with information about SNAP and other regulatory actions affecting refrigerants available in the market in 2014 versus 2017, DOE knew about more extensive regulatory actions focused on R-134a and R-404a and was obligated to consider them in its cumulative and impacting regulatory evaluations.

C. DOE Should Have Modeled Other Refrigerants Based on the Likelihood that R-134a and R-404a Would be Unavailable and Adjusted the Final Rule Accordingly

DOE has based the 2017 CRE standards exclusively using the unique performance characteristics of R-134a and R-404a. The only conclusion to be drawn from this is that the new standards are achievable when using those refrigerants. A corollary conclusion is that it is unproven and illusory whether such standards can be achieved by relying upon other refrigerants with different characteristics and energy use properties.

DOE discussed the SNAP program in its Preliminary TSD, NOPR, comments request, public meetings, etc. It recognized that SNAP was a significant issue worthy of addressing through additional data collection. In its Final TSD, DOE recognizes that the energy efficiencies of various product components depend directly upon the type of refrigerant used. *See e.g.,* Doc. # 102 (Final TSD) at 1-6 (defining "self-contained condensing unit" as an assembly of components designed to compress and liquefy "a specific refrigerant" that is an integral part of the refrigerated equipment….); and 3-15 (energy efficiency of equipment with lower operating temperatures is directly impacted by thermodynamic behavior of refrigerants used.). Somehow, DOE failed to analyze the "cumulative" or "impacting" effects of using other refrigerants on its final standards. *See* 10 C.F.R. Part 430, Appendix A to Subpart C at 10(g).

Instead, DOE should have looked at alternative refrigerants and revised its models and final CRE standards to be based on the refrigerant marketplace in 2017. To avoid such scrutiny, DOE wrongfully and misleadingly claimed that there was inadequate publicly available data on alternative refrigerants to set appropriate standards. *Id.* But, at the same time, DOE has admitted that its standard for considering something to be "technologically feasible" is for that something to have been "physically demonstrated in at least a prototype form." Doc. # 102 (Final TSD) at 2-6. Use of the "alternative refrigerants" has not only been used in prototypes, but are already in use in Europe and in the U.S. *See* Doc. # 87 (Continental Comments) at 1 (advising DOE that, "refrigerants such as propane and CO_2 have

been approved by EPA and are actively being evaluated and tested in products"). Continental also noted that alternative refrigerants impact the performance of equipment. DOE noted in its NOPR that numerous refrigerants are approved for use in CRE. Doc. # 52 (NOPR), 78 Fed. Reg. at 55,919.

In sum, modeling alternative refrigerants was necessary and not doing so was an inexcusable error.

D. DOE Failed to Properly Evaluate the Impacts of This Rule on ENERGY STAR

DOE also failed to evaluate the impacts of the government's ENERGY STAR program on this rule. *See* Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,739 (collecting stakeholder comments about the conflicts between DOE's proposed standard levels and ENERGY STAR). ENERGY STAR is a "joint program of the [EPA] and DOE that establishes a voluntary rating, certification, and labeling program for highly energy efficient consumer products and commercial equipment." *Id.* 79 Fed. Reg. at 17,739, n.4. It is a sophisticated program and is supposed to the "best of the best" in terms of energy efficiency technologies. *Id.* On one hand, DOE dismisses it as "optional" but on the other, it recognizes that it represents an effective program in which market forces help to drive improved energy conservation. *See id.*

Many comments expressed concern that the new standards were stricter than ENERGY STAR.[4] *See, e.g.* Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,739. In

[4] As stated by DOE: "ENERGY STAR only maintains standard levels applying to equipment classes VCS.SC.M, VCS.SC.L, VCT.SC.M, VCT.SC.L, HCS.SC.M, HCS.SC.L, HCT.SC.M, and HCT.SC.L." Doc. # 104 (Final Rule), 79 Fed. Reg. 17740 at n.25.

response, DOE tried to rationalize any discrepancies simply because they are two separate programs.

> DOE cautions against direct comparisons between its standards and those set forth by ENERGY STAR due to the different natures of the programs and how the two different sets of standard levels are set. ENERGY STAR is a voluntary program which derives its standard levels from market data based on the performance of certain models of equipment currently available for purchase. ENERGY STAR also does not model performance or include consumer economics in its standard setting process. DOE sets its standards as applicable to all covered equipment and develops them through specific analyses of equipment performance and modeling of economic impacts and other downstream effects. Due to the different goals and methodologies of these two programs, a direct comparison may not be entirely relevant.

Id. (footnote omitted).

This response misses the point. To regulated manufacturers, what matters most are the levels of energy use set by these two programs. This rule sets one value to comply with the EPCA and ENERGY STAR sets another value that is supposed to provide a market-based incentive to achieve even greater energy savings by using less energy than what is allowed under this rule to meet EPCA.[5]

A comparison must be made between the two programs to understand, at the very least, the continued utility of ENERGY STAR incentives. When commenters directly informed DOE that ENERGY STAR should be included in its cumulative regulatory burden analysis, DOE dismissed the above concerns and said that

---

[5] NAFEM recognizes that DOE references the ENERGY STAR database in various points in the preamble related to obtaining information about product performance. This does nothing to address the concern that DOE only looked at the Final Rule's resulting allowed energy use in isolation and never reviewed them in comparison to ENERGY STAR.

because ENERGY STAR is voluntary, it is not part of the analysis.[6] *Id.*, 79 Fed. Reg. at 17798. Voluntary or not, it was arbitrary and capricious for DOE to ignore the impacts of another energy efficiency program administered by DOE that affects the same equipment.

II. DOE's Failure to Consider Interplay Between Product Categories Undermines any Determination that Overall Improved Energy Conservation Would Result from the New Standards

In conducting its rulemaking, DOE looked at product categories in isolation. However, many product categories compete with each other in the marketplace. Without looking at the interplay between the product categories and how the proposed change in energy efficiency requirements may affect the overall product marketplace – for example whether the new standards will encourage customers to choose one product over another – DOE has failed to properly design the new requirements. *See* 42 U.S.C. 6295(o)(3).

The statute requires any new standard be designed to achieve energy efficiency that is both "technologically feasible and economically justified." 42 U.S.C. § 6295(o)(2)(A). Economic justification is determined by considering whether there is a total projected amount of energy savings, among other factors. 42 U.S.C. §§6295(o)(2)(B)(i)(III), 6316(e)(1). The new or amended standard must actually result in significant energy conservation. 42 U.S.C. § 6295(o)(3)(B) and 6316(e)(1).

[6] ENERGY STAR has become a requirement for purchases by many governmental and private entities, which essentially strips away the voluntary nature of the program. *See*, *e.g.*, Doc. # 93 (NAFEM comments) at 8-9 (describing that the "ubiquity of requirements that entities purchase Energy Star equipment results in the program's standards being a de facto regulatory limit."); Doc. # 65-A1 (Traulsen Comments) at 13.

As explained below, failure to consider the product categories in relation to one another significantly undermines DOE's justification that there is actual energy savings that would result from DOE forcing new standards for CRE. First, the Final Rules encourage using equipment that is less energy efficient, and, second, customer behavior in making product choices was never considered, because DOE did not collect appropriate information for such an analysis.

A. The New Requirements Encourage Substituting Equipment that is Less Energy Efficient

The new standards encourage reliance on equipment models that are inherently less energy efficient and encourage the use of refurbished equipment, which does not lead to decreases in energy consumption. One would rationally predict that more energy efficient equipment categories would have lower allowed energy use than similar models that, due to differences in functionality, inherently require more energy. DOE's Final Rule provides the reverse.

To illustrate, consider the category of vertical cabinets that are self-contained at medium temperature, designated as VCT.SC.M and VCS.SC.M. A seven cubic foot capacity refrigerator with a solid door (VCS.SC.M) has a new allowable energy consumption limit of 1.71 kWh/day, which is a 36 percent reduction from the previous limit. This same cabinet equipped with a glass door and light (VCT.SC.M) has an energy consumption limit of 1.56 kWh/Day, which is less than the solid door option and 63 percent, almost two-thirds, than the previous limit:

Category	2010 Standard (kWh/day) *See* 79 Fed. Reg. at 17,732, Table II.1 (where V = 7 cubic feet)	New 2017 Standard (kWh/day) *See* 79 Fed. Reg. at 17,727, Table I.1 (where V = 7 cubic feet)	Percent Reduced
VCT.SC.M (transparent door)	0.12 × V + 3.34 = 4.18	0.1 × V + 0.86 = 1.56	63%
VCS.SC.M (solid door)	0.10 × V + 2.04 = 2.74	0.05 × V + 1.36 = 1.71	36%

Illogically, the standards allow greater energy use for those with solid doors versus those with transparent doors. As a result, it will be difficult for a transparent door product to meet a lower standard than its solid door cousin. Doc. # 0073-A1 at 4. As stated by Lennox, "the proposed standards are so prescriptive that only a very limited number of compliant VCT products would be able to be produced and sold," and the Final Rule provides incentives for either continuing to repair and use old, less efficient, VCT products or making solid door units with their higher overall allowed energy use:

> [B]y severely limiting the availability of VCT products, DOE's proposed standards will have the unintended effect of increasing the sales and utilization of vertical open product (*e.g.*, the VOP and SVO products) that consume comparatively more daily energy. Thus, the proposed standards could actually result in the adoption of less efficient CRE by consumers, which would conflict with the goals of DOE's rulemaking.

Docket 0073-A1 (Lennox Comments) at 4 (footnote omitted).[7]

[7] VOP is a vertical open model and SVO is semi-vertical open model. *See* Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,728 at Table 1.1*.

Horizontal freezers are a similar example. As the table below shows, the new standards for using transparent doors is so greatly reduced that they will become increasingly expensive and the market likely will elect to repair existing or substitute much cheaper and grossly less energy efficient open units that have no doors at all:

Category	Prior Standard (kWh/day) *See* 79 Fed. Reg. at 17,732, Table II.1; Table II.2 (where V= 8.83 cubic feet and TDA = 12 cubic feet)	New Standard (kWh/day) *See* 79 Fed. Reg. at 17,727, Table I.1 (where V= 8.83 cubic feet and TDA = 12 cubic feet)	Percent Reduced
HCT.SC.L (freezer with transparent door)	0.75 × V + 4.10 = 10.73	0.08 × V + 1.23 = 1.94	81.94%
HZO.SC.L (open)	1.92 × TDA + 7.08 = 30.12	1.9 × TDA + 7.08 = 29.88	0.80%

To illustrate, assume a grocery store currently uses a horizontal, open-top freezer, like the kind where a shopper would reach in for a bag of frozen peas or can of frozen orange juice. Also assume the grocery store is considering ways to reduce refrigerant charge by switching from a remote cabinet to a self-contained unit without sacrificing merchandising look and function. The options available would be to keep the open-top with the self-contained unit (HZO.SC.L) or to use a transparent top (HCT.SC.L), which would mean glass or plastic doors that would be lifted in order to access the peas or juice. The option with the transparent top inherently uses less energy because there are doors versus being open to the store's ambient air. However, using aggressive design options for HCT.SC.L will result in

costs for those models greatly increasing as a result of the changes required to meet the drastic almost 82 percent reduction in energy use required by these standards. End users, like the grocery store owner, will very likely continue to use the open models due to the increased cost of the replacement model with transparent doors.[8]

As stated by a Hussman representative in a discussion about requiring aggressive technologies for transparent doors:

> And I think what the Department may be missing is that if you force manufacturers to use design options like that . . . what you will do is you will drive the end users to continue to use open equipment, which uses 75 percent more energy than the closed equipment will. I mean, in a lot of applications, those two equipment classes are in direct competition with each other.

Doc. # 62 at 89-90 (comments of Mr. T. Anderson (Hussmann)).

In response, DOE admitted that it ignores the interactions between product categories when setting standards. DOE stated that it screens technologies based on end-user effects but that it only considers each of its product classifications in isolation:

> But when you're talking about product switching, that would be a high-level policy that I'm not going to speak to specifically, but what I will say is that standards are developed for each class in isolation at the level which is most practical or found to be most technologically feasible and economically justified for that class. So there should not theoretically be a class which is under-regulated compared to another.

Id. at 90-91 (comments of Mr. Weber [DOE]).

[8] If a manufacturer were to make an HCT.SC.L (horizontal cabinet, with transparent doors, operating at low temperature) unit that meets the standards at a more reasonable cost, it likely could only do so if it loses functionality, like automatic electric defrost, which would violate 42 U.S.C. § 6295(o)(B)(i)(IV).

DOE's response seems to lack common sense and is based on an illogical assumption that all classes, in "theory," are comparably regulated by the end of DOE's isolated product-by-product decision-making process, not on the result of an objective review of how the complete set of standards actually compare to one another in the marketplace. DOE has not identified how its decisions rely upon information as to how customer behavior may respond to these new standards. This issue, as raised in the rulemaking process, demonstrates DOE's lack of reasoned decision-making. *See Prometheus Radio Project v. FCC*, 373 F.3d 372, 402 (3d Cir. 2004) (FCC did not adequately justify limits on local television ownership because of flawed assumptions in underlying technical analysis).

Again, when faced with complex and interrelated final standards decisions, DOE appears to inappropriately simplify and isolate its decision-making process in a way that reaches illogical conclusions as a whole. While DOE set stringent energy consumption standards in individual categories, its failure to consider whether product energy use reductions will actually result in energy savings when considered over all categories of commercial refrigeration equipment is arbitrary and capricious and will drive consumer choices to less energy efficient products and alternatives. Clearly, this is contrary to the intent of the statute. 42 U.S.C. § 6295(o)(3)(B); 6316(e)(1).

B. National Impacts Analysis is Flawed Because Shipments Analysis Does Not Account for Customer Purchasing Behavior

DOE had opportunity to capture information on customer behavior and factor it into its analysis, which may have prevented the Final Rule's illogical market influences and outcomes, but DOE wholly failed to do so. This failure is directly evident in DOE's calculation of the National Impacts Analysis ("NIA"). The NIA assesses the aggregate impacts at the national level of net present value ("NPV") of total customer savings and national energy savings ("NES") and includes a Shipments Analysis. DOE's model used in the Shipments Analysis only includes inputs of historical shipments, building stock additions (a projection about building floor space), and market saturation to provide future shipment predictions. Doc. # 102 (Final TSD) at Sections 9.2 and 9.4. However, DOE's model does not account for how future shipments may change based on the imposition of the standards. *See id.*

Numerous comments explained that customers would change behavior based on increased equipment prices resulting from the new standards:

> Several stakeholders stated that customer purchase behavior would change in response to an increase in equipment prices due to more stringent standards. At the NOPR public meeting, Hussmann commented that it had noticed a shift from the open VOP.RC.M to the closed VCT.RC.M equipment class, possibly due to energy savings being valued by customers (primarily supermarkets). (Hussmann, Public Meeting Transcript, No. 62 at pp. 236–37). However, Hussmann noted that the shift could be reversed if closed equipment diminished in its utility as a merchandising platform. (Hussmann, Public Meeting Transcript, No. 62 at p. 237). Hillphoenix and Danfoss stated that if standards require the use of triple-pane coated glass, reduction in visibility will result in users shifting back to less-efficient open cases.

> (Danfoss, No. 61 at p. 4; Hillphoenix, No. 71 at p. 2). Hussmann noted that it had not observed a reversal of the trend toward closed units in response to previous efficiency standards. (Hussmann, Public Meeting Transcript, No. 62 at p. 235).

Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,770 (emphasis added).

DOE's response was dismissive by asserting it simply did not have information about customer behavior to consider in the rulemaking and concluded, with no accompanying reasoning, that there would be no change in product utility:

> DOE recognizes that increased cost for closed equipment meeting the amended standards in today's final rule has the potential to influence a shift from more efficient closed equipment to open equipment. However, DOE did not have sufficient information on customer behavior to model the degree of such equipment switching as part of the NIA. Further, DOE has concluded that the amended standards in today's final rule will not diminish the utility of commercial refrigeration equipment, and they do not require triple-pane coated glass.

Id., at 17,770 (emphasis added).

DOE's rulemaking record also demonstrates stakeholders' concern that consumers would simply refurbish or prolong the life of existing equipment:

> Several stakeholders commented that, in response to a possible price increase due to standards, CRE customers may prolong the life of existing equipment through refurbishment. Danfoss asserted that a 15 to 20 percent increase in prices will reduce demand for new units and increase sales of used of [sic] refurbished units. (Danfoss, No. 61 at p. 3). NAFEM commented that any standard where the payback on new equipment is longer than 2 years will likely steer users into the refurbished market. (NAFEM, No. 93 at pp. 7–8). Traulsen commented that the impact of refurbishing equipment was not fully represented by DOE, especially in the small business environment where customers are likely to hold onto equipment longer. (Traulsen, No. 65 at p. 19). Hussmann stated that due to price increases resulting from higher efficiency, the refurbishment of old equipment will reduce the market for new equipment. (Hussmann, No. 77 at p. 5).

Id.; *see also* Doc. # 76-A1 (True Comments) at 3 (stating: "The market for new equipment is directly proportional to price. If the price of equipment goes up, fewer new units are sold and more, old and inefficient equipment stays in the market."). DOE's response to this concern is equally dismissive and relies on DOE's unsupported "beliefs:"

> DOE acknowledges that increases in price due to amended standards could lead to more refurbishing of equipment (or purchase of used equipment), which would have the effect of deferring the shipment of new equipment for a period of time. DOE did not have enough information on CRE customer behavior to explicitly model the extent of refurbishing at each TSL. However, DOE believes that the extent of refurbishing would not be so significant as to change the ranking of the TSLs considered for today's rule.

Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,770 (emphasis added).

Again, faced with complex market considerations, DOE's actions are wholly inadequate. DOE asserts it did not have the information on customer behavior. It did not explain how or why obtaining the data on customer behavior would be difficult or why that information would not affect the results on the NIA. DOE's use of this model without this data is unsupported. *See id.* A court should only defer to an agency's decision on a model if the agency addressed alleged defects by either changing the model or explaining why a fix would be extremely difficult and of relatively minor moment to the rulemaking. *See*, *e.g.*, *NRDC v. Herrington*, 768 F.2d 1355, 1390-91 (D.C. Cir. 1985) (upholding the DOE's use of a model only when DOE directly addressed alleged defects by either changing the model or explaining why a fix would be extremely difficult and of relatively "minor moment" to the rulemaking).

Moreover, DOE did not provide any basis for its conclusion that utility will not be affected or its "belief" that refurbishing would not have a significant effect. *See* Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,770. DOE must "articulate a reason for its action that demonstrates a 'rational connection between the facts found and the choice made.'" *Owner-Operators,* 656 F.3d at 587 (quoting *State Farm*, 463 U.S.at 43). Courts have held that an "educated guess" is not a reasonable basis for a regulation. *Chem. Mfrs. Ass'n v. EPA,* 885 F.2d 253, 265 (5th Cir. 1989) (holding that EPA should have obtained information on in-plant biological treatment processes, rather than end-of-pipe biological treatment processes, in establishing effluent limitations and EPA's assumption that limitations could be met was "no more than an educated guess"). DOE has not provided anything to support its mere "belief" that consumer behavior in response to this rulemaking would have no impact on its analysis. This belief is no more than an "educated guess," which is not a reasoned basis to support the Final Rule and does not deserve this Court's discretion.

It is not rational that such a critical, obvious factor as customer behavior is excluded from developing final standards that will impact customer choice. DOE's explanation falls short of what Congress and the public demand in setting final energy conservation standards that must be technologically feasible and economically justified and result in actual energy savings. DOE's actions here are not a permissible or logical outgrowth of the information in the record.

III. DOE's Rule is Based on a Flawed Engineering Analysis

DOE's challenge and obligation to derive appropriate and workable energy efficiency standards is complex. DOE's standards are linear equations that establish the maximum allowed energy use for a given product class.[9] *See* Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,727, Table 1.1. The equations are a function of a derived slope factor multiplied by a piece of equipment's volume ("V") or total display area ("TDA") and then added to a y-intercept value. Doc. # 102 (Final TSD) at 5-2; *see also* Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,727, Table 1.1 (*e.g.* maximum allowed energy use for category VOP.RC.M is 0.64 x TDA + 4.07). "These equations were developed using the outputs of the engineering analysis, with specific analysis points corresponding to calculated daily energy consumption." Doc. # 102 (Final TSD) at 5-2, 3. The engineering analysis also calculates the y-intercept value, which is also called the "offset" or the "end effects." *Id.* at 5-3. All of these calculations are captured in the Engineering Spreadsheet. *See* Doc. # 98.

The inputs into the Spreadsheet are not based, for the most part, on an actual piece of equipment that exists, but on a "theoretical construct:"

> So next we would like to talk about the representative units which form the basis of the analysis. So for each primary equipment class analyzed, DOE defined a representative unit to serve as its analysis point for modeling. This is sort of a theoretical construct. It's a

[9] These rules and ENERGY STAR are inconsistent in how energy efficiency standards are set for smaller CRE units. For example, for the small, vertical cabinets discussed in Section II.A, *supra*, ENERGY STAR recognizes there are differences and sets different standards for them, whereas DOE maintains its linear equation no matter the cabinet size. *See* Doc. # 65-A2-A4 (Traulsen comments at Appendix A – C showing the differences between the linear DOE equations and the step-wise ENERGY STAR standards).

> prototypical unit defined by a set of features for analytical purposes. It doesn't correspond to a specific manufacturer's model. It's sort of an average or aggregate of what the Department feels to be representative out on the market of a high-shipment volume, high-usage piece of equipment within a class.

Doc. # 62 (Public Hearing Transcript) at 51 (explanation from DOE representative Mr. Weber).[10] Moreover, DOE did not provide the engineering analysis until after October 2013, the public hearing. *Id.* at 69 (comments from DOE representative Mr. Weber that the spreadsheet was "not made available at this stage of the rulemaking. That's something that DOE could certainly take under advisement.").

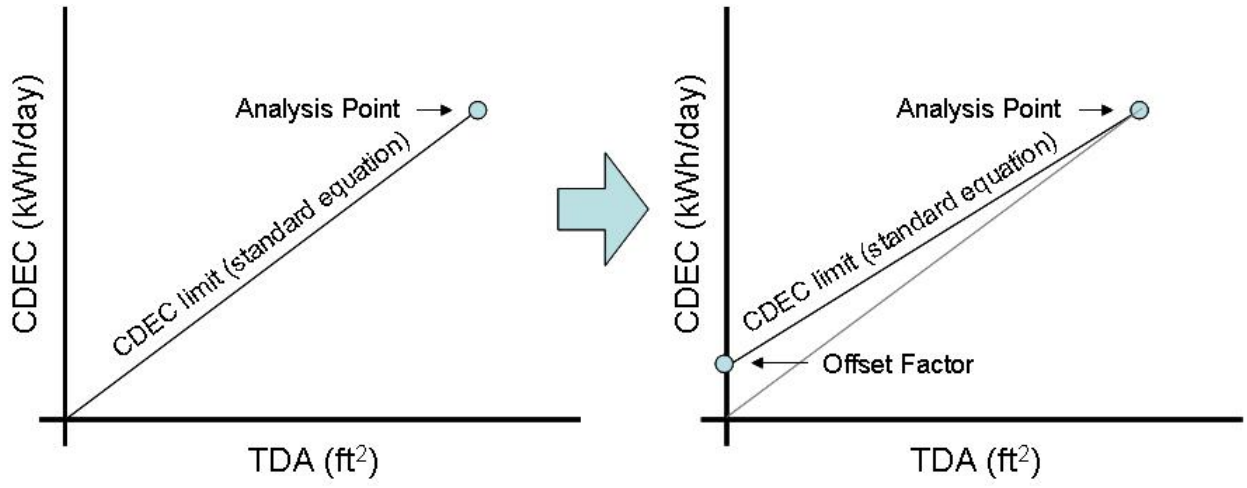
Because the engineering analysis is so critical to DOE's process for developing energy efficiency standards and is based on theoretical constructs, affected entities must be able to properly evaluate the analysis for their respective real-world products. *See* Doc. # 98 (Final Rule Engineering Spreadsheet). DOE has failed to provide meaningful notice and comment because not only did it not provide the spreadsheet until after the public hearing, less than a month before final comments were due, the spreadsheet provides no way for a regulated entity to predict how its individual products would perform under the same analysis, or how to double check the DOE analysis to confirm its legitimacy relative to products with comparable characteristics.

[10] When pushed to explain why no actual prototypes were used in its analysis, DOE's response was that it "is not in the prototype construction business." Doc. # 65-A1 (Traulsen Comments) at 8 (quoting Doc. # 0062 (Public Hearing Transcript) at 68-69).

Also, DOE did not properly validate the spreadsheet, which, again, does not allow an equipment manufacturer to evaluate how its models would perform using DOE's analysis. The improper validation process undercuts the final standards. Moreover, the engineering spreadsheet uses flawed inputs that were not properly remedied by the DOE, even after notice and comment. Remanding the Final Rule is warranted to address and fix these fundamental flaws.

A. Engineering Spreadsheet Provides no Way for a Regulated Entity to Assess Impacts of New Standards on their Products

As described above, the engineering analysis drives the equations that are the final energy standards. *See supra*; Doc. # 102 (TSD) at 5-2, 3. The engineering analysis establishes the energy performance at a maximum technology level (the "analysis point" in the table below), the "offset" and then derives the slope factor. The resulting linear line reflects energy allowances for various products based on either total display area or volume and related changes to those two inputs:



Id. at TSD at 5-68, Figure 5.8.1 (Illustration of Offset Factor using TDA as the Normalization Metric). The offset essentially represents the amount of energy

required to "power up" the unit before accounting for size, display area, or other energy demands.

Critically, even though DOE's standards are represented by a linear equation (line), DOE actually derived its equation based on a single data point. *See id.* In the real world, there is significant variability within each of the equipment classes, but the engineering spreadsheet does not account for variability or adjustments for the various product characteristics or allow one to predict how equipment with components varying from the base case would perform. *See* Doc. # 98. *See* Doc. # 98 (Final Rule Engineering Spreadsheet).

The Engineering Spreadsheet can be opened and some fields can be changed, but when the fields are modified, such as increasing volume or total display area for a particular product class, the spreadsheet does not provide any changes to the actual resulting daily energy use calculated.[11] *Id.* The Spreadsheet does not function as a "model" that can be manipulated to address different scenarios. *Id.* In fact, it merely serves as a cursory way to view what DOE calculated for the base produce model and nothing more. *See id.* Notably, DOE appears to have done this exercise in response to comments, but never afforded stakeholders the same opportunity to input their own data points into the engineering analysis. Doc. # 102 (Final TSD) at 5-41 (explaining its post-comment period efforts to evaluate the engineering

[11] As a demonstrative exercise, in the Engineering Spreadsheet (Doc. # 98): 1) Open "Results" tab; 2) select "Change Equipment Class" button in center of page; 3) select radio button for VCT – vertical with transparent doors, SC – self-contained, and M – medium temperature (38° F); 4) scroll down page and note "Daily Energy Use [kWh/day]" at maximum level; 5) select "Design Specifications" tab; 6) change "Case Gross Refrigerated Volume [ft^3]" for VCT.SC.M; 7) select "Results" tab and scroll down; and 8) nothing happens; there is no change in energy consumption from that noted during step 4.

model by stating that it conducted additional teardown analyses and that: "[a]fter the specifications for a given unit were collected, these data points were input into the engineering simulation to model the performance of the specific unit under examination.").[12]

Without being able to review and confirm the function of the Engineering Spreadsheet to evaluate anything other than the base case, stakeholders were denied meaningful notice and comment. *See* 5 U.S.C. § 706(C)-(D). The spreadsheet supplied by DOE does not reveal how the resulting daily energy use varies with changes to inputs on either TDA or volume. *See*, *e.g.*, *United States v. Nova Scotia Food Products Corp.,* 568 F.2d 240, 252 (2d Cir. 1977) (stating: "To suppress meaningful comment by failure to disclose the basic data relied upon is akin to rejecting comment altogether" and holding that FDA's failure to disclose to interested persons the scientific data upon which it relied in promulgating regulation establishing time-temperature-salinity prescriptions for processing smoked whitefish was "procedurally erroneous.").

B. Engineering Spreadsheet was not Properly Validated

NAFEM asserts DOE did not properly validate its model and stakeholders were denied the opportunity to fully understand or comment on it. If discrepancies are found in a model's application, the model's use can nevertheless be supported if it "performed well on the full battery of validation tests." *BCCA Appeal Grp. v. U.S.*

[12] As discussed in Section III.B, *infra*, DOE has not made available any specific information about what units or what specifications were used in this analysis.

E.P.A., 355 F.3d 817, 834 (5th Cir. 2003), as amended on *denial of reh'g* and *reh'g en banc* (Jan. 8, 2004) (upholding EPA's use of model because discrepancies were plausibly explained based on the record and the model held up under a number of validation tests). DOE only conducted data validation in response to comments (*see* Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,763 (describing the additional teardowns DOE conducted in response to concerns about the model performance with actual equipment)), but it has never made the validation results available for review and such results are still not part of the administrative record. Not only did the spreadsheet not allow stakeholders to evaluate equipment other than the base product, DOE's improper validation does not provide stakeholders an alternative way to evaluate the analysis performance for real-world products.

In the October 2013 public hearing, DOE described its validation of the model as "spot-checking:"

> MR. COUSINS: So you're saying you tested models that are on the market and you actually achieved the results that are being proposed?
>
> MR. WEBER: No. We tested units that are on the market. And our simulation produced similar results to those models when you tweaked the simulation to simulate those models. So say you pulled something off the shelf, ... Test it, for example. And then we look at the point in this model for a unit that has all of those same features. We have done some comparisons like that and shown that they roughly line up.
>
> MR. CYMBALSKY: To put this a different way, --
>
> MR. WEBER: Spot check.

Doc. # 52 (Public Meeting Transcript) at 119-120. DOE's "spot check" verification process to determine if (in DOE's view) the model's results "roughly line up" is entirely inappropriate. *Id.* The results of this "spot checking" were never available

for review and comment and in response to comments DOE cannot demonstrate that its additional teardowns provided any actual validation. DOE's standards validation process remains fuzzy and the results are not included in the public record. This is an inappropriate foundation for the Final Rule standards.

The TSD describes the validation as follows:

> DOE then conducted physical examination and teardown of the units which it procured, gathering detailed data on the geometries, feature sets, and configurations of these units as well as on operating parameters such as heat exchanger temperatures. The data points measured aligned with the necessary inputs to the engineering model for simulation of a given unit (namely, the design specifications discussed in section 5.6.1). After the specifications for a given unit were collected, these data points were input into the engineering simulation to model the performance of the specific unit under examination. The results of the energy consumption model were compared against the performance data gathered through testing or certification, and the two showed sound agreement, with the energy consumption model generally being slightly conservative (modeling the units as using slightly more energy than they consumed as tested). DOE believes that this exercise verifies the validity of its engineering model in simulating equipment performance.

Doc. # 102 (TSD) at 5-41 (emphasis added).

The Final Rule traded in the arbitrary standard of "sound agreement" referenced above for the equally unscientific concept of "good alignment:"

> Then, DOE used this empirically determined data as inputs into its engineering model, allowing the model to simulate these specific manufacturer models as closely as possible. The results showed good alignment between the model outputs and the physical test results across a range of equipment classes and efficiencies, validating the abilities of the model.

Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,763 (emphasis added).

A core concern that affected manufacturers expressed about the model was that they could not make it fit real-world situations. *See*, *e.g.*, *id* ("Several stakeholders,

however, felt the model was purely theoretical and did not account for factors affecting field performance."). DOE's response fails to adequately respond to these concerns. There is no rational way for the public to understand what types of equipment were used in a teardown analysis and how well the model did or did not work with that equipment. "Validation" cannot be based on "trust" alone; DOE must provide more to support proper validation.

When a model is challenged, "the agency must provide a full analytical defense." *Columbia Falls Aluminum Co. v. EPA*, 139 F.3d 914, 923 (D.C. Cir. 1998) (quoting *Eagle–Picher Indus., Inc. v. EPA,* 759 F.2d 905, 921 (D.C.Cir.1985). DOE has failed to do this and thus the rule is arbitrary and capricious. *See id.*

C. Engineering Spreadsheet Uses Flawed Inputs

In addition to not being able to evaluate how a given piece of equipment would perform in the Engineering Spreadsheet, affected entities also raised issues related to specific inputs to the analysis. While DOE made adjustments between the NOPR and the Final Rule to each of the three examples below, DOE still failed to adequately address the issues.[13]

[13] The refrigerant types used will also impact the inputs to the Engineering Spreadsheet, including compressors and insulation, and thus are also affected by DOE's failure to model other refrigerants based on EPA's current SNAP regulatory activity. *See* Section I.D, *supra*; *see also* Doc. # 65-A1 (Traulsen Comments) at 8 (discussion how SNAP could affect the types of insulation blowing agents allowed).

1. Offsets

As shown in the TSD illustration in § III.A, *supra*, one piece of the standards equation is the "offset." "These offset factors serve to represent energy consumption end effects inherent in equipment operation regardless of the size of the equipment." Doc. # 102 (Final TSD) at 5-3. "The offset factors prevent the allowable maximum energy use from going to zero at small volume or total display area (TDA) values." *Id.* It is essentially the power required to initially power up the equipment.

DOE attempted to develop new offsets, but in response to comments it reverted back to the offset values it used in its 2009 rule. *Id.* at 5-69. In some instances, though, the values do not make any sense and lack sufficient DOE explanation. For example, the offset values of solid door refrigerators and solid door freezers only vary by 0.02 kWh/day. *See* Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,727, Table 1.1, (compare VCS.SC.L at 0.22V +1.38 and VCS.SC.M at 0.05*V +1.36). This miniscule difference makes no real world sense and helps to demonstrate how DOE's approach to evaluating product classes in isolation is arbitrary and capricious.

Moreover, these offsets do not account for the wide variability within a product category. DOE indicates the offsets were derived from measuring the heat conduction through the case ends, but depending on what types of equipment were used in that analysis, it is likely that cases of differing functionality are not represented. *See* Doc. # 102 (Final TSD) at 5-68.

Numerous affected parties expressed concerns that the "equipment classes defined by DOE in the proposed rule did not sufficiently encompass various sub-classifications, especially with regard to pass-through and reach-in cases." Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,743 (citing to comment of Continental, Doc. # 87 at 1, NAFEM, Doc. # 93 at 7, True, Doc. # 76 at 3, and Traulsen, Doc. # 65 at 16). Commenters also expressed concern that simplification of product categories and related engineering modeling, did not accommodate the "multitude of custom-built and niche equipment that exists" and that these "would require further analysis in order to determine a viable standard." Doc. 104 (Final Rule), 79 Fed. Reg. at 17,743, (citing to Doc. # 65 (Traulsen comments) at 20 and Doc. # 76 (True comments) at 1). For example, a pass-through unit has two doors, so an offset derived for a unit with only one door would have an offset lower than and completely unrepresentative of a two-door unit; this is an unjustifiable process for setting standards.

DOE's response to comments is insufficient. DOE merely references taking into account equipment geometry and operating temperature, but never addresses the equipment functionality or the manufacturers' concerns:

> In response to the concerns of interested parties, DOE <u>believes</u> that its existing equipment class structure is sufficient to account for the majority of variation in type and combination of equipment geometry, condensing unit configuration, and operating temperature. DOE provides allowances in its standards to account for the energy needs of different equipment sizes through its use of standard level equations constructed in the form of linear equations varying with equipment size (as measured by volume or TDA) <u>and through its use of offset factors to represent energy end-effects.</u> DOE also accommodates variation in operating temperature outside of its three rating

> temperatures through the use of a lowest application product temperature provision in its test procedure. 77 FR at 10305 (February 21, 2012).

Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,743 (emphasis added). DOE references equipment geometry, condensing unit configuration, size, and temperature, but never addresses the functionality aspect of reach-in and pass-through cases. Given the wide variety of product functions, not just size, contained within a given product category, it is likely that certain units would have a hard time meeting the standards when those standards start with an offset value that simply does not reflect the unit's true end effects. DOE's response to such comments is that it "believes" that equipment variation is accounted for, which without support is wholly inadequate. *See, e.g.*, *ALLTEL*, 838 F.2d at 558 (D.C. Cir. 1988).

2. Compressors

A compressor is a critical component of every CRE unit, and it is also the component that requires the most energy to function. DOE chose a level of compressor efficiency that is not supported by the record and is contrary to its position on how it chooses technologies to include in its analysis. *See*, *e.g.*, *Texas Oil & Gas Ass'n v. EPA*, 161 F.3d 923, 933 (5th Cir. 1998) (agency rule is arbitrary and capricious if agency offers an explanation that is counter to the evidence); *Air Line Pilots Ass'n v. FAA*, 3 F.3d 449, 454 (D.C. Cir. 1993) (fundamental internal inconsistencies in an agency action are arbitrary and capricious).

DOE must screen which technologies will be considered in the rulemaking:

> DOE uses four screening criteria to determine which design options are suitable for further consideration in a standards rulemaking.

> Namely, design options will be removed from consideration if they are not technologically feasible; are not practicable to manufacture, install, or service; have adverse impacts on product utility or product availability; or have adverse impacts on health or safety. 10 CFR part 430, subpart C, appendix A, sections (4)(a)(4) and (5)(b).

Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,745. DOE uses only current technologies in its Screening Analysis. *See id.* at 17,767 ("DOE agrees with Structural Concepts that existing technologies should be the basis of it engineering analysis, and has considered only currently available technologies in that analysis."). For compressors, DOE did not consider how they actually perform today, but instead screened-in a design option that assumed that compressors could achieve a two percent increase in efficiency. *See id.* at 17,760. This assumption was based on the statement by one compressor manufacturer, Danfoss: "DOE implemented the suggestion of Danfoss which stated that a 2% increase in performance over today's standard offerings … is attainable." *Id.*

It is not reasonable for DOE to assume an increase in performance of all compressors based on a one sentence representation by one manufacturer. In its submitted comments, Danfoss states:

> While it is difficult or impossible to project future achievements in such a mature technology, it would be reasonable to assume either continued use of efficient compressors available today, or alternatively a 1 % to 2% efficiency improvement over this time horizon for a 5% price increase.

Doc. # 61-A1 at 2. Importantly, Danfoss does not definitively say 2% is achievable, but only provides an estimate of "1% to 2%." *Id.*

Additionally, from this statement, it is unclear if Danfoss meant all its compressors or compressors used in a certain product category. *Id.* Moreover, Danfoss does not state how these efficiencies are to be gained – does there have to be product redesign? Would there be adverse impacts on product utility? Neither the record nor DOE explain. *See id.* Also, there is absolutely no support in the record that this would be true of all compressors used in the market today. In addition, there are plenty of stakeholder comments that question whether these efficiency gains are achievable. *See*, *e.g.*, Doc. # 65-A6 (Traulsen Comments – Appendix E) at 2; Doc. # 75-A1 (AHRI Comments) at 8-9.

Such a decision runs counter to DOE's stated process that it uses only current technologies in its Screening Analysis. Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,767. Inconsistent agency decisions are arbitrary and capricious. *See Medicines Co. v. Kappos,* 699 F. Supp. 2d 804, 809 (E.D. Va. 2010) ("Agency action resting on an inconsistent or self-contradictory explanation is, by definition, arbitrary and capricious."); *Lee Lumber and Building Material Corp. v. National Labor Relations Board,* 117 F.3d 1454, 1460 (D.C. Cir. 1997) (finding agency decision arbitrary where "clear and fundamental inconsistency" existed in agency's reasoning and agency failed to explain inconsistency); *Air Line Pilots Ass 'n v. FAA,* 3 F.3d 449,453 (D.C. Cir. 1993) (remanding agency order as a result of "a basic inconsistency in [the agency's] reasoning").

Moreover, where an agency adopts changes to a proposed rule based on a single commenter's suggestion, courts have held that the agency failed to comply with the

notice provisions of the APA. *National Min. Ass'n v. Mine Safety & Health Admin.,* 116 F. 3d 520, 530-532 (D.C. Cir. 1997)("Even if a party knows that a commenter has made some novel proposal to an agency during a rulemaking, the party cannot be expected to respond unless it has some reason to believe the agency will take the proposal seriously. Actual notice, then, depends on awareness that the agency, despite its failure to alert the public, is considering adopting what the commenter has suggested."); *see also Fertilizer Institute v. EPA,* 935 F. 2d 1303, 1312 (D.C. Cir. 1991)(holding that agency's final rule was not a logical outgrowth of the proposed rule where the agency obtained its "evidence and arguments" from a comment letter).

DOE's superficial and wholesale application of Danfoss' likely misconstrued comment about compressor capabilities, and incorporating that assertion into the Engineering Model is not a reasonable or rational action. *Id.*

3. Insulation Foam Thickness

DOE concluded in its Screening Analysis that increasing insulation foam thickness was a viable design option to evaluate when setting new energy efficiency standards. Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,748. DOE's assumptions regarding insulation thickness are not realistic in the marketplace. As expressed by many commenters, DOE cannot uniformly add insulation thickness to all products and all product categories without significant and otherwise unaccounted for consequences. *See id.*, 79 Fed. Reg. at 17,749 (discussion of "Design Options Impacting Form Factor" summarizing comments from multiple stakeholders).

There are many instances where adding insulation thickness will have adverse impacts on product utility or product availability. *See id.* This is in direct contravention to the DOE's statutory mandate. *See id.*, at 17,745 (*citing* 10 CFR Part 430, Appendix A to Subpart C, (4)(a)(4) and (5)(b)).

Generally, the footprint of a refrigerator or freezer cabinet is fixed due to customer requirements, such a floor space, ergonomics, existing cabinets, utility with other equipment (*e.g.* tray carts that can be stored in large cabinets), etc. Therefore, any increase in thickness of insulation inwards will result in impacts to the unit's internal volume and prevent food industry standard sheet and bun pans from being used. Conversely, increasing the thickness outwards, increases floor space; and for mobile units restricts the ability to move them through existing doorways. This could greatly diminish the utility of these cabinets. *Id.*, 79 Fed. Reg. at 17,749. DOE included costs to CRE manufacturers for redesign due to increased insulation thickness, but this did not include costs and effects on the end users. *See* Doc. # 102 (Final TSD) at 5-27.

Moreover, DOE never directly addresses concerns over loss of function. For example, DOE states:

> With respect to the concerns over additional foam thickness having an impact on the usefulness of the product to consumers, DOE notes that in its teardown analyses it encountered a number of models currently on the market utilizing the increased foam wall thicknesses which it modeled. Since manufacturers are already employing these wall thicknesses in currently available models, DOE believes that this serves as a proof of concept and that the resulting changes to form factor would be of minimal impact to end users. DOE also would like to remind stakeholders that it is not setting prescriptive standards, and should manufacturers value some features over others, they are free to

> use different design paths in order to attain the performance levels required by today's rule.

Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,750.

DOE makes the general statement that it found increased thicknesses in teardowns but were these for models where capacity was a critical piece of the utility? DOE's response to the multiple stakeholder comments is dismissive and illustrates a lack of understanding of the issue. *See id.* DOE's "belief" that "a number of models" with increased insulation provides "proof of concept" is a meaningless argument, because stakeholders were not claiming this was unproven technology. *Id.* In other words, the issue is not whether increased insulation thickness is currently used in any equipment. The issue is, in models where either increasing the footprint outward or decreasing the volume inward would decrease or detrimentally impact such model's utility, did DOE actually observe models that employed thicker insulation panels? DOE's retort provides no evidence that it researched whether the existing products with increased insulation thickness were suitable in the same applications as similar products without increased insulation. *Id.* DOE does not address this concern regarding impact on end users.

DOE's attempt to "remind stakeholders that it is not setting prescriptive standards" is a red herring. *See id.* Stakeholders did not argue that DOE was requiring them to make any of the design changes proposed. Commenters properly justified why some of DOE's proposals should not be considered valid design options, which were ultimately used to determine new energy efficiency standards.

This demonstrates DOE failed to consider a critical factor – potential loss of utility – when conducting this rulemaking. *See Owner-Operators*, 656 F.3d at 587. That is arbitrary, capricious, and contrary law. DOE's broad brush statement that it saw the modeled insulation thickness in teardown analyses is entirely non-responsive to whether its use in models where it currently is not used would result in adverse effects to utility. DOE cannot leave these critical concerns unanswered and expect the resulting rule to stand. *See id.* at 588.

IV. DOE Failed to Properly Address the Impacts of the New Standards on Small Businesses

As Co-Petitioners AHRI and Zero Zone, Inc. discuss in detail in their contemporaneously filed brief, the Final Rule will have a disproportionate and severe impact on small businesses. Because of that impact, DOE determined it was required to analyze how its rule affects small businesses pursuant to the Regulatory Flexibility Act ("RFA"). Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,814. The agency must make a "'reasonable, good-faith effort' to carry out the mandate of the RFA." *Alenco Commc'ns, Inc. v. FCC,* 201 F.3d 608, 625 (5th Cir. 2000) (quoting *Associated Fisheries, Inc. v. Daley,* 127 F.3d 104, 114 (1st Cir.1997)).

Co-Petitioners explain that DOE's final regulatory flexibility analysis was deficient because it failed to discuss significant alternatives to the rule, such as exempting small businesses. The statute supplies a number of alternatives the DOE should have considered. 5 U.S.C. § 603(c). As summarized by the SBA's Office of Advocacy:

> Some of the traditional alternatives may include lengthening the time for compliance; tiering the compliance requirements based on the size of the business or degree to which small entities contribute to the problem; providing for exemptions for parts of the rule or the entire rule for small entities; timing compliance to correspond with other statutory deadlines with related requirements; allowing for increased flexibility in the methods used for achieving the agency's objectives (for example, using a performance standard instead of requiring a specific technology); making requirements less prescriptive; etc.

RFA Guide for Government Agencies at 47 (footnote omitted). None of these regulatory solutions, including the option for exempting small businesses, was analyzed by DOE.

DOE also failed to follow other RFA procedural requirements. The RFA requires agency rules to include a "final regulatory flexibility analysis," which, among other things, must include:

> a description of the steps the agency has taken to minimize the significant economic impact on small entities consistent with the stated objectives of applicable statutes, including a statement of the factual, policy, and legal reasons for selecting the alternative adopted in the final rule and why each one of the other significant alternatives to the rule considered by the agency which affect the impact on small entities was rejected.

5 U.S.C. § 604(a)(6) (emphasis added).

Here, DOE (1) failed to take any steps to minimize the significant economic burden on small businesses; and (2) failed to describe the steps it had taken to minimize the significant economic impact on small businesses. DOE's alternatives analysis does not satisfy these RFA requirements. The statute specifically requires DOE to describe "the steps the agency has taken to minimize the significant economic impact on small entities," and no such description appears in the Final

Rule. *See* Doc. # 104 (Final Rule), 79 Fed. Reg. at 17,812-14) and Doc. # 102 (Final TSD at Chapter 17, the "Regulatory Impact Analysis").

Despite the significant impact on small businesses, DOE ignored opportunities to appropriately reduce this impact, which demonstrates that the Final Rule is arbitrary and capricious under the APA and should be remanded. Additionally, if DOE did take steps to lessen the burden on small businesses, it has failed to describe those steps, meaning DOE violated the RFA and the rule must be remanded. *See, e.g., Nat'l Ass'n of Psychiatric Health Sys. v. Shalala,* 120 F. Supp. 2d 33, 44 (D.D.C. 2000) (remanding Dept. of Health & Human Services' rule for failure to comply with the procedural requirements of 5 U.S.C. § 604(a)(6)).

CONCLUSION

For all of these reasons, the Court should rule that DOE violated the APA and the EPCA in promulgating the Final Rule, and enter an order vacating the Final Rule; or in the alternative, remand the Final Rule to DOE for reconsideration and further review and comment, and for all relief the Court deems fair and just.

Dated: May 8, 2015

s/ Jeffrey S. Longsworth
Jeffrey S. Longsworth
BARNES & THORNBURG LLP
1717 Pennsylvania Avenue, N.W.
Suite 500
Washington, D.C. 20006-4623
Phone (202) 408-6918
Attorneys for Petitioner the North American Association of Food Equipment Manufacturers

CERTIFICATE OF SERVICE

The undersigned, counsel for Petitioner North American Association of Food Equipment Manufacturers, hereby certifies that on May 8, 2015, a true and correct copy of the Brief of Petitioners North American Association of Food Equipment Manufacturers, was filed electronically and will therefore be served electronically upon all counsel of record.

s/ Jeffrey S. Longsworth
Jeffrey S. Longsworth
Barnes & Thornburg LLP
1717 Pennsylvania Avenue, N.W. Suite 500
Washington, D.C. 20006-4623
Phone (202) 408-6918

Attorneys for Petitioner the North American Association of Food Equipment Manufacturers

CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITATION, TYPEFACE REQUIREMENTS, AND TYPE STYLE REQUIREMENTS

1. This brief complies with the type-volume limitation of Fed. R. App. P. 32(a)(7)(B) because this brief contains 13,846 words, excluding the parts of the brief exempted by Fed. R. App. P. 32(a)(7)(B)(iii).

2. This brief complies with the typeface requirements of Fed. R. App. P. 32(a)(5) and Cir. Rule 32(b) and the type style requirements of Fed. R. App. P. 32(a)(6) because this brief has been prepared in a proportionally spaced typeface using Microsoft Office Word 2003 in 12-point Century type.

s/ Jeffrey S. Longsworth
Jeffrey S. Longsworth
BARNES & THORNBURG LLP
1717 Pennsylvania Avenue, N.W.
Suite 500
Washington, D.C. 20006-4623
Phone (202) 408-6918

Attorneys for Petitioner the North American Association of Food Equipment Manufacturers

CIRCUIT RULE 30(D) CERTIFICATION

The undersigned, counsel for Petitioner North American Association of Food Equipment Manufacturers, hereby certifies that the Brief of Petitioners North American Association of Food Equipment Manufacturers includes all the materials required by Circuit Rule 30(a), and there are no materials required within the scope of Circuit Rule 30(b).

s/ Jeffrey S. Longsworth
Jeffrey S. Longsworth
BARNES & THORNBURG LLP
1717 Pennsylvania Avenue, N.W.
Suite 500
Washington, D.C. 20006-4623
Phone (202) 408-6918

Attorneys for Petitioner the North American Association of Food Equipment Manufacturers

RULE 30(a) APPENDIX

TABLE OF CONTENTS

1. 79 Fed. Reg. 17,726 (March 28, 2014) (Final Rule)