U.S. DEPARTMENT OF ENERGY
CONVENING REPORT
ON
THE FEASIBILITY OF A NEGOTIATED RULEMAKING TO REVISE THE CERTIFICATION PROGRAM FOR COMMERCIAL HEATING, VENTILATING AIR CONDITIONING AND COMMERCIAL REFRIGERATION EQUIPMENT

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I. EXECUTIVE SUMMARY

There has been some disagreement and confusion surrounding DOE's current regulations for the certification of commercial heating, ventilating, air conditioning, and refrigeration equipment. DOE therefore thought it would be appropriate to review this program. Since it had recently had considerable success using negotiated rulemaking in developing another complex rule,[1] it decided to consider its use for the revision and administration of these rules. Other affected interests likewise believed that it would be appropriate to use a collaborative approach to address them. DOE announced on July 10, 2012, that it was exploring the feasibility of conducting a reg neg to revise the certification regulations for these commercial products.

This report, based on a confidential interview process involving forty (40) parties conducted by a neutral convener,[2] analyzes the feasibility of resolving these issues utilizing consensus-based negotiations between the significantly affected parties.

The parties agreed without exception that the scope of the rulemaking should be significantly broadened beyond the initial proposal. Reg neg is the preferred process for the undertaking compared to an ordinary rulemaking process since it is a more effective means of addressing the complex technical issues involved. Moreover, the process can help repair what many see as a strained relationship between the industry and the Agency. Given these considerations, it is far less likely that a reg neg limited to the proposed scope would reach a consensus, although it could still provide helpful information and ideas. It is important to note that the scope issues described in relation to a potential reg neg are applicable regardless of whether DOE uses reg neg or ordinary notice and comment rulemaking. For purposes of this analysis, if the scope is broadened, the chances of reaching a consensus using a reg neg are greatly enhanced, for the reasons discussed below.

After the introduction below, section III is organized by party type, followed by the issues that each party found most important and their position on that issue.

[1] In the Fall of 2011, the DOE initiated a formal negotiated rulemaking with key parties in hopes of negotiating energy conservation standards for three types of distribution transformers. The months-long effort culminated in a Notice of Proposed Rulemaking for all three types, with one of the three being proposed at a level negotiated by the committee. For additional background see discussion titled, "Open to Negotiations to Address Energy Efficiency," section II, below.

[2] When DOE announced this convening, it assured the parties that the convener would be neutral and independent. DOE also explained the importance of confidentiality and established rigorous protocols to ensure, among other things, that DOE staff did not communicate with the convener. DOE has firmly adhered to these principles throughout the process. For more details on DOE's public statement on confidentiality and other matters regarding negotiated rulemaking, see Appendix C, below. Aris Marantan, Ph.D., provided invaluable technical support during the interview process and was an integral part of the convening team. Alan Strasser, however, is ultimately responsible for the recommendations in this report. Philip J. Harter, Alan's former colleague at The Mediation Institute, also provided key process insights that improved this report.

II. INTRODUCTION

INDUSTRY PROFILE

The equipment covered in this report includes commercial refrigeration equipment (CRE), commercial heating, ventilating and air-conditioning equipment (HVAC), commercial water heaters, and commercial boilers. For organizational purposes, commercial water heaters and commercial boilers are grouped together with other commercial HVAC products. Commercial products, as discussed in this report, are those not manufactured or intended for residential use.

- *CRE* covered in this report consists of self-contained commercial refrigerators, freezers, and refrigerator-freezers; remote condensing commercial refrigerators, freezers, and refrigerator-freezers; ice-cream freezers; and self-contained commercial refrigerators with transparent doors designed for "pull-down" temperature applications.
- *Commercial HVAC* covered in this report consist of three subsets:
    - Small, large, and very large commercial package air-conditioning and heating equipment, packaged terminal air conditioners (PTACs), packaged terminal heat pumps (PTHPs), and single package vertical units.
    - *Commercial water heaters* consisting of commercial water heaters, commercial unfired hot water storage tanks.
    - *Commercial boilers* including commercial hot water supply boilers and commercial packaged boilers.

According to DOE's 2012 Buildings Energy Databook, the annual primary energy consumption for all commercial refrigeration, ventilation, space heating and space cooling (Figure 1) accounts for about 8.44 quadrillion Btus of energy, or 46.2% of the total primary energy consumption in commercial buildings in the US.

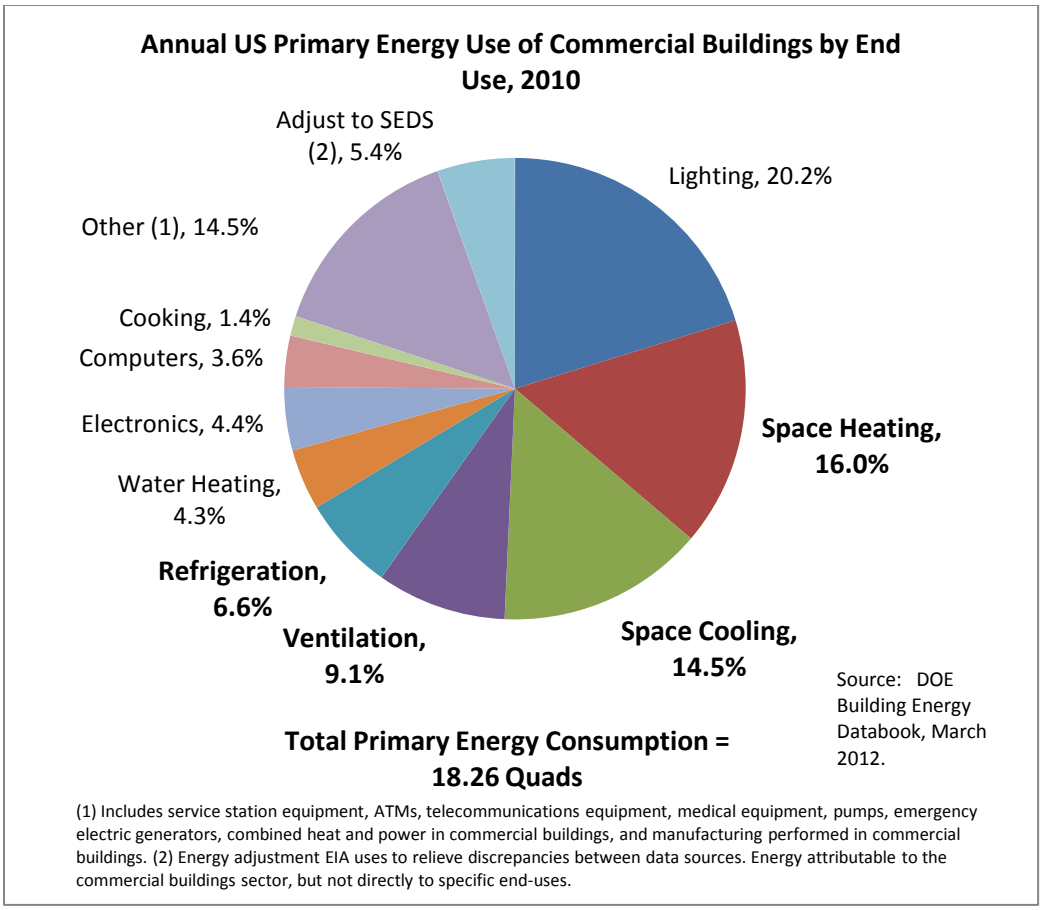

Figure 1: Annual US Primary Energy Consumption by End Use, 2010

Figure 2 shows an overall estimated breakdown of CRE energy consumption by equipment segment.

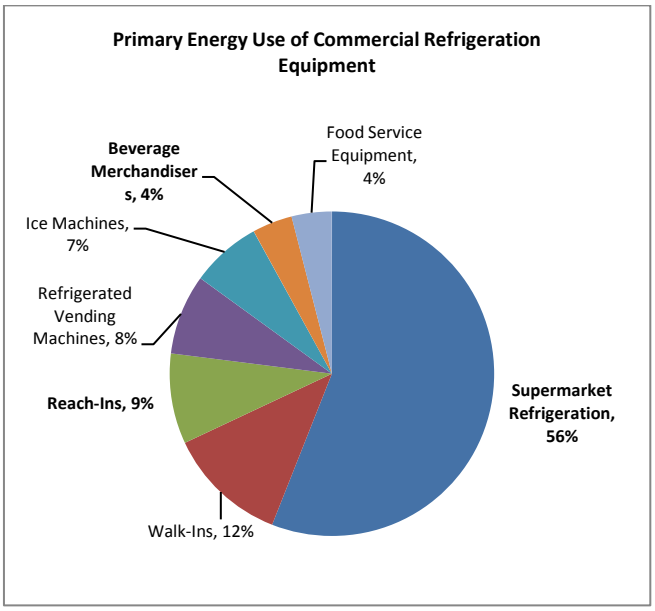

Figure 2: Primary Energy Use of Commercial Refrigeration Equipment (Source: NCI 2009)

Figure 3 shows an overall estimated breakdown of commercial cooling and commercial heating energy consumption by equipment segment.

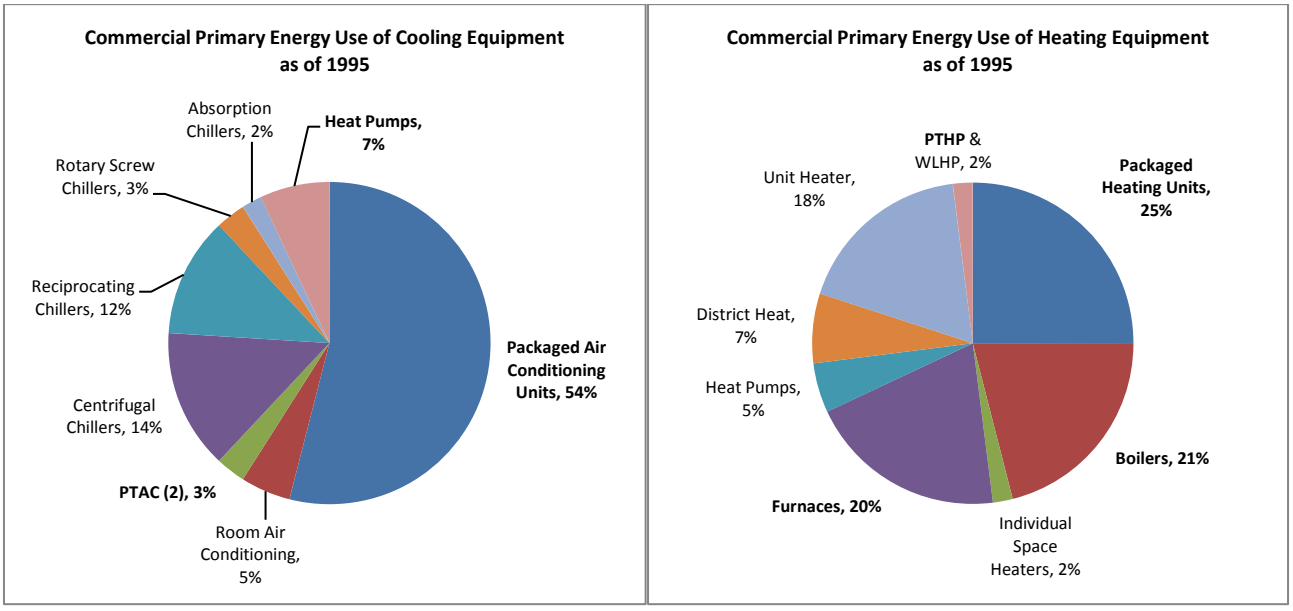

Figure 3: Commercial Primary Energy Use of Cooling and Heating Equipment as of 1995 (Source: DOE BED March 2012)

By any measure, this is a major, significant industry. CRE and commercial HVAC fall under the North American Industry Classification System's (NAICS) code 33341 – Ventilation, Heating,

Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing. According to the US Census Bureau's 2009 Statistics of US Businesses[3] for NAICS code 33341, HVAC and commercial refrigeration equipment manufacturing accounts for 1800 manufacturing establishments (a single physical location at which business is conducted and/or services are provided) in the US. The annual payroll under this classification, which is all forms of compensation, such as salaries and wages for this industry, is valued at $5,613,359,000. The number of paid employees for the industry is 133,259, or about 13% of total employees for all machinery manufacturing in the U.S. The total value of shipments for this industry, including sales, shipments, receipts, revenue, or business done by domestic establishments, excluding foreign subsidiaries, is valued at $40,503,880,000.[4]

Given the high degree of primary energy use, there are significant environmental impacts from these sectors. For example, in terms of greenhouse gas emissions, Table 1 shows the average emissions resulting from CRE and commercial HVAC primary energy consumption.[5]

Table 1: Estimated Greenhouse Gas Emissions (Million Metric Tons) from CRE and HVAC Primary Energy Consumption

	CO_2	CH_4	NO_x
CRE	238.87	6.41	3.72
HVAC	1433.23	38.48	22.33
TOTAL	**1672.10**	**44.89**	**26.05**

Manufacturers have for over 50 years been certifying and testing their products either within their own facilities or through various consortia. Such testing was traditionally conducted to ensure quality control with customer specifications. Later, as government regulations increased on energy efficiency and food safety, such consortia broadened the scope of their test offerings accordingly. Today, an industry trade group administers a certification program whose purpose is to "demonstrate to government and building owners…that equipment performance claims have been independently measured and verified, instilling consumer confidence and enabling fair product comparisons."[6]

Specifically, the Air Conditioning, Heating, and Refrigeration Institute (AHRI) requires its 400 members (nearly entirely from the HVAC industry, as opposed to CRE), representing over 800,000 models, to adhere to many rules, including:

- Annual mandatory tests of at least 20% of each OEM participant's certified Basic Models or Basic Model Group(s)(BMG);
- Products that are unable to meet the requirements of the applicable rating standard are subject to mandatory re-rates or shall be made obsolete, meaning they may no longer be manufactured or sold; and

[3] https://www.census.gov/econ/susb/index.html.
[4] From U.S. Census Bureau's 2007 Industry Statistics, http://www.census.gov/econ/industry/hierarchy/i3334.htm.
[5] http://www.eia.gov/oiaf/1605/pdf/Appendix%20F_r071023.pdf.
[6] AHRI. http://www.ahrinet.org/App_Content/ahri/files/Certification/CERT%20PROGS%20ENG%20JAN2012.pdf (accessed 9/14/12).

- Products that fall below the minimum state or federal efficiency requirements shall be removed from the AHRI Directory of Certified Product Performance (Directory) and the government Agency shall be notified.[7]

LEGAL AND REGULATORY BACKGROUND

Overview of DOE Regulations. DOE has promulgated[8] several regulations on efficiency standards and certification across the commercial equipment types that are the subject of this report.[9] DOE has also issued enforcement regulations aimed at ensuring that manufacturers meet the energy and water conservation standards and save energy for American consumers and businesses. More specifically, DOE through these regulations seeks to "establish a uniform, systematic, and fair approach to certification, compliance, and enforcement that will allow the Department to effectively enforce its standards and ensure a level playing field in the marketplace without unduly burdening regulated entities."[10] In essence, DOE's regulations include three key requirements for manufacturers that must be addressed sequentially:

- First, manufacturers must test their products in accordance with the DOE test procedure(s).
- Second, manufacturers must compare their test results with the applicable energy conservation standards to ensure that their products meet those standards.
- Third, manufacturers will be required (as of December 31, 2012) to certify to DOE, based on their testing, that the commercial products they sell comply with the applicable energy efficiency requirements. Certification must occur prior to initial distribution in commerce and annually thereafter.[11]

Testing Requirements. Manufacturers must address two key requirements for testing conducted in support of developing the certified ratings, namely:

- how the products are grouped for testing purposes by a representative "basic model;" and
- how many units are tested (e.g., sample size).

A basic model (with some product-specific exceptions, as described further below) includes:

> all units of a given type of product (or class thereof) manufactured by one manufacturer, having the same primary energy source, and which have essentially identical electrical, physical, and functional (or hydraulic)

[7] *AHRI Operations Manual*, pgs. 11 - 12, January 2012. http://www.ahrinet.org/App_Content/ahri/files/Certification/2012%20General%20OM.PDF (accessed 9/14/12)(providing detailed guidance and requirements to users).

[8] Congress provided authority to DOE to improve energy efficiency under Title III of the Energy Policy and Conservation Act of 1975, as amended (EPCA). 42 U.S.C. § 6316 addresses commercial equipment, which includes the products subject to this convening.

[9] This report focuses on commercial, not residential products, though the certification process is conceptually similar for both.

[10] 75 FR 56796, 56797.

[11] 10 CFR 429, Subpart B.

> characteristics that affect energy consumption, energy efficiency, water consumption, or water efficiency.[12]

Essentially identical models need not be tested. Instead, DOE permits, for purposes of testing pursuant to DOE's regulations, manufacturers to group their models into "basic models" based on characteristics that impact energy/water efficiency. For example, if several models of refrigeration cabinet used in stores to chill food are sold in a variety of colors but are otherwise identical, all these colored cabinets would clearly be a basic model. The problem becomes more complex given the variety of factory-installed options and accessories available to end users, as noted in Figure 8, below. DOE has stated that manufacturers may group models at their discretion as long as all models within the basic model have the same certified rating and the manufacturer has test data to support the certified rating. There is not, however, a requirement for there to be multiple individual models within a basic model; therefore, a basic model may only include a single model.

A brief history of the DOE rulemakings that further define these concepts and provide context for the parties' views described in section III are set forth below.

CCE Requirements. DOE first adopted certification, compliance and enforcement regulations for commercial equipment in a January 5, 2010 final rule.[13] It set forth sampling provisions, testing tolerances, independent testing/verification requirements, and the initial set of enforcement regulations for most types of commercial equipment. DOE subsequently revised some of those provisions in its March 7, 2011 Certification, Compliance, and Enforcement final rule.[14] The March 2011 CCE final rule contains DOE's most comprehensive explanation of the concepts of basic model and sample sizes used for certification testing for various products. For instance, regarding sample size, DOE clarified that DOE regulations require at least two (2) samples to support certification for each basic model.[15] It further explained that commenters to the rulemaking agreed that if modifying a model changed energy or water consumption and tests would no longer support the rated value, such a modification would require creating a new basic model that must be certified to DOE.[16] In addition, DOE created a general definition of basic model that was similar to the existing product-specific definitions.

DOE clarified in the CCE final rule that despite any slight differences between this general definition and the historical, product-specific ones, it was not changing the meaning of a basic model and would "maintain the status quo until a future rulemaking." DOE emphasized that "[t]his change is intended to provide a single, uniform definition… that permits what the Department understands to be the current practice—the grouping together of individual models with essentially (but not necessarily exactly) identical energy or water efficiency characteristics." It did not further attempt to craft criteria to further define "essentially identical," noting that defining precise changes that would trigger creation of a new basic model (e.g., specific percentages of variance) "is a complicated matter" given the diversity of products offered by

[12] 10 CFR 430.2.
[13] 75 FR 651.
[14] 75 FR 12421.
[15] 10 CFR 429.11(b).
[16] 76 FR 12422 at 12429.

manufacturers.[17] The compliance date for certifying these products[18] is currently December 31, 2012.[19]

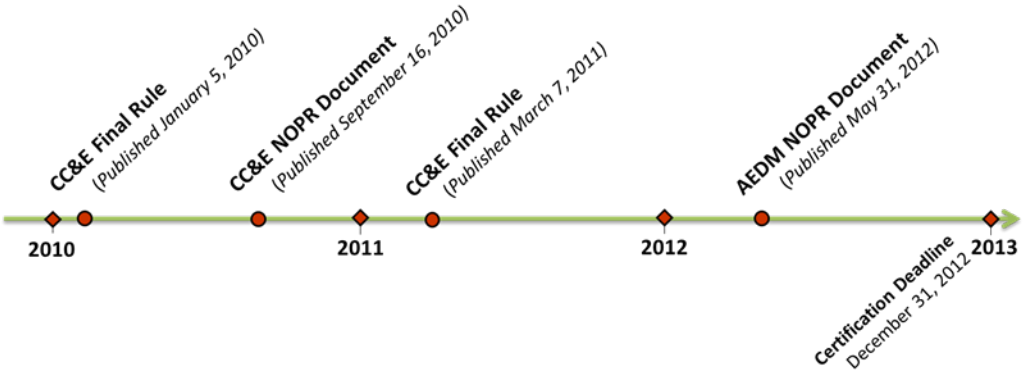

Figure 4: CCE and AEDM Rulemaking Timeline

Voluntary Independent Certification Programs (VICPs). The January 2010 rule required that testing prior to certification for HVAC and water heating products be performed at an independent test facility or under the supervision of independent testing personnel. That rule also created a framework that would have allowed for manufacturer testing (without independent oversight) if the manufacturer were also a participant in a DOE-approved VICP.[20] No VICPs were ever approved by DOE under those regulations, however. On September 16, 2010, DOE published a Notice of Proposed Rulemaking on CCE (CCE NOPR) proposing changes to the testing and certification process.[21] The March 2011 CCE final rule, responded to comments on the September 2010 proposed rule and adopted these proposals.[22] Consequently, all manufacturers are subject to the same testing requirements for the purposes of the certification requirements that will be effective on December 31, 2012. But some interests are of the view, however, that the VICP regulations and their interpretation are both controversial and confusing. For additional analysis of this concern see the discussions titled "Differing Interpretations" in section III, below.

Enforcement. DOE, despite having legal authority to do so earlier, only recently began enforcing its commercial regulatory requirements.[23] Currently, if a basic model is not properly certified, DOE may seek civil penalties and/or injunctive action to prohibit distribution in commerce of the basic model.[24]

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[17] Id.
[18] The current certification standards for HVAC and CRE can be found at 10 CFR 429.42 (CRE) and 429.43 (HVAC).
[19] 10 CFR 429.12 (i).
[20] 10 CFR 431.174-175 (Jan. 1, 2011 ed.); 75 FR 652, 667.
[21] 75 FR 56796, 56803.
[22] CCE Final Rule at 12504 (removing and reserving §§ 431.171 - 431.176). DOE notes that it wants to encourage verification testing, but chose not to change the definition of VICPs, and will consider other changes to VICPs in a subsequent rulemaking. CCE NOPR at 56803.
[23] 74 FR 52, 793, October 14, 2010.
[24] 10 CFR 429.114, 429.118.

AEDM Proposed. Aware that certification, including the related testing requirements, are largely viewed by industry as burdensome, DOE has permitted Alternative Efficiency Determination Methods (AEDMs) for HVAC commercial equipment since the January 2010 rule. DOE proposed earlier this year to expand the types of products allowed to use AEDMs to include CREs and other products. DOE also proposed revisions to the existing AEDM requirements. AEDMs allow manufacturers to certify using simulations instead of relying solely on laboratory tests.[25] In its NOPR (AEDM NOPR) DOE explained that AEDMs are computer modeling or mathematical tools that predict the performance of non-tested basic models. In the AEDM NOPR, DOE requested comment on, among other things: (1) whether preapproval of an AEDM by DOE was necessary; (2) the scope of coverage for AEDMs; (3) how an AEDM could be substantiated based on testing tolerances and sample size; and (4) subsequent DOE validation of AEDMs through testing. In response, some from industry sought to link issuance of an AEDM final rule with the December 31, 2012 certification compliance reporting date by asserting that the certification deadline should be extended to allow manufacturers an opportunity to employ the less burdensome AEDM compliance strategy. The comment deadline has since passed and DOE has not published a final rule at this time. This convening analysis, therefore, necessarily assumes the absence of an AEDM rule.

Open to Negotiations to Address Energy Efficiency. Both DOE and its stakeholders have generally been open to utilizing negotiations to develop regulatory proposals for energy efficiency standards. Indeed, DOE in 1999 explored the feasibility of conducting a negotiated rulemaking on residential clothes washers and air conditions. The exploration did not lead to a reg neg, although no formal decision on it was actually made. And various parties have negotiated consensus efficiency standards on several occasions. For example, in 2004, numerous industry representatives of the commercial package air conditioning and heat pump industries forged a consensus with the State of California and several environmental advocacy groups on efficiency standards that was eventually submitted to DOE on January 10, 2010.[26] As noted previously, in 2012, DOE utilized a negotiated rulemaking to develop standards for distribution transformers.[27] In 2012, however, while a coalition of parties proposed a consensus proposal to DOE regarding residential furnaces, the standard, which was finalized by DOE through a direct final rule, has been challenged in court.[28]

III. THIS CONVENING

BACKGROUND

This section contains a synthesis based on views expressed by participants in the interview process.

Based on feedback from industry, DOE announced on July 10, 2012 that it was considering the feasibility of conducting a negotiated rulemaking to develop certification regulations for

[25] 77 FR 32038, May 31, 2012.
[26] 75 FR 14368, 14370, 3/25/10.
[27] 77 FR 7282, 7292, Feb. 10, 2012.
[28] American Public Gas Association v, United States Department of Energy, No. 11-1485 (D.C. Cir. 2012).

commercial HVAC (including commercial water heaters and commercial boilers) and CRE products (not including walk-ins). In addition, DOE indicated it was acutely aware that industry is concerned with the burdens related to the wide variety of options available to HVAC and CRE equipment purchasers and the highly customized process of manufacturing such products. Specifically, DOE sought assessment through the convening process on topics including: (1) how basic models might be grouped for certification; (2) what information should be certified to DOE; and (3) when certifications should be made. They also clarified that DOE was "not considering re-opening the concept of 'basic model' with respect to the rating and testing requirements and will address any potential changes to the compliance date for commercial certifications in a separate proceeding."[29] DOE also provided a link on its website providing public information on the negotiated rulemaking process. This document discussed the process under the Negotiated Rulemaking Act, provided the legal authorities for its use, and described the confidential nature of the convening process (see Appendix C).

During this convening, 40 representatives from a wide range of commercial HVAC and CRE interests were interviewed. Industry stakeholders included manufacturers of commercial unitary air-conditioners and heat pumps, package terminal air-conditioners, single packaged vertical units, commercial water heaters, commercial boilers and commercial refrigeration equipment. Both small and large business manufacturers in the commercial HVAC and CRE industries were interviewed. One major manufacturing trade association for this industry, AHRI, was interviewed. Other trade associations contacted were the National Association of Convenience Stores and the Heating, Air-Conditioning & Refrigeration Distributors International. Other types of organizations contacted included testing laboratories; energy efficiency and environmental advocacy groups; and state energy agencies. Users and parties that purchase commercial HVAC and CRE equipment were also included in the interview process. Not unexpectedly, some parties who were contacted chose not to participate in the interview process (see section IV, below). The interviews were conducted in August and September of 2012, and most were conducted by phone.

SUBSTANTIVE ISSUES

OVERVIEW

Differing Interpretations. The convening team notes at the outset that there appears to be widespread confusion among the parties regarding the interpretation of several key DOE regulatory concepts relevant to the HVAC and CRE products of interest here. For instance, parties disagree what a basic model is and what type of grouping strategy would satisfy DOE's requirements for given the vague notion of an "essentially identical characteristics."[30] In addition, as noted in the discussion immediately below, the impact of CCE final rule on voluntary independent (i.e., third-party) certification programs (VICPs) is subject to interpretation and hence uncertainty and confusion.

[29] Email from Ashley Armstrong, Department of Energy, titled *Announcement from the U.S. Department of Energy Regarding Certification of Commercial HVAC and Refrigeration Equipment*, July 10, 2012.
[30] See discussion on CCE Requirements, above at p. 10.

Second, the CCE final rule, discussed in section II, above, addressed many issues, including to whom a manufacturer could certify compliance. The issue was the use of VICPs as an alternative to certification by manufacturers directly to DOE. The previous final rule of January 5, 2010 allowed for the use of VICPs for HVAC and water heating products.[31] On September 16, 2010, however, DOE published a Notice of Proposed Rulemaking on CCE (CCE NOPR) proposing to "simplify" the requirements so that only one process could be used for HVAC and water heating equipment testing. Therefore, the same procedure would have to be followed regardless of whether the company was participating in a VICP or not. DOE explained that the sampling procedures currently applicable for non-VICP members must be used for certification testing of all types of commercial HVAC and water heater equipment and verification of the AEDM.[32] In the CCE final rule, this VICP proposal was adopted.[33] Consequently, the certification process that will be effective on December 31, 2012 applies the same requirements to all manufacturers and uses the same definition of basic model. But, as noted in the substantive interview summaries below, this issue has also fostered confusion regarding what the regulations mean. Whether or not it intended to do so, this change appears to require products to be tested under DOE's requirements and not those established by VICPs. As is discussed in more detail below, there are significant differences between the two, so this change while appearing minor in fact induced concerns. The basic model definition was not proposed for amendment in the AEDM rulemaking, discussed below.

There are four key differences between the DOE's enforcement requirements and AHRI verification program requirements:

- To make a compliance determination, DOE tests a sample size of between 4 and 21 units per basic model, in most cases; for verification purposes, AHRI requires one sample per basic model group (BMG). The BMG is conceptually similar to DOE's basic model, but AHRI allows broader grouping in a BMG.
- The use and application of testing tolerances.
- While DOE's enforcement testing is done at its discretion, AHRI requires all its member companies to submit to a mandatory post-certification verification test for 20% of each BMG each year. As a result, a manufacturer participating in AHRI's program, compared to a non-participating manufacturer, appears to have a far greater likelihood of getting tested by AHRI in their verification program versus the DOE's enforcement testing program (see Figure 5, below).

[31] 10 CFR 431.174, 75 FR 652, 667.
[32] 75 FR 56796, 56803.
[33] CCE Final Rule at 12504 (removing and reserving §§ 431.171 - 431.176). DOE notes that it wants to encourage verification testing, but chose not to change the definition of VICPs, and will consider other changes to VICPs in a subsequent rulemaking. CCE NOPR at 56803.

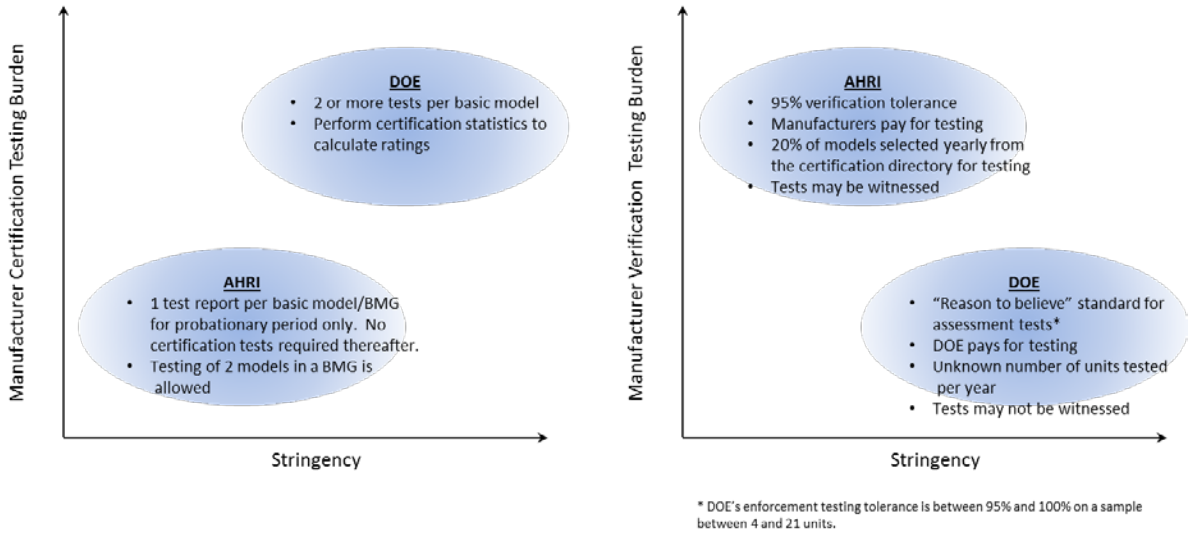


Figure 5: Comparison of DOE and AHRI Testing Burden

Issue Interaction. While many issues were identified as being linked to certification across the CRE and HVAC spectrum, several cross-cutting themes were applicable to both groups. First, all manufacturing parties, as well as end users and advocacy groups (discussed in their respective sections, below), discussed certification in the broadest sense (see Figure 6, below). Second, they viewed certification as inextricably linked to the core issues of AEDMs, sample size, testing tolerances, and basic model and groupings (see Figure 7, below). For instance, common statements summarized below illustrate these connections:

- How can you certify without testing?
- AEDMs would not be needed if the number of basic models could be reduced.
- Even using more permissive grouping strategies and AEDMs, they could not meet the certification deadline.
- They would be hard pressed to test two samples, but could comply if new AEDMs and grouping were available.

Figure 6: Many Issues Linked to Certification

Figure 7: Core Issues Interrelated with Certification

Explaining the issues based on the recent rulemakings, an industry representative stated, "[w]ithout an AEDM in place, manufacturers will have no other option but to test all their basic models. This is contradictory to the objective of the AEDM rulemaking, which is to reduce the testing burden on manufacturers. Given the large volume of data needed to populate the certification reports, the certification reporting date of December 31, 2012" should be postponed until a minimum of 18 months lead-time after publication of the final rule on AEDM.

Second, on the bedrock issue of the utility of certification programs, nobody questions whether a certification program is needed, but they do differ on *the appropriate program contours and the roles of DOE and industry* in its implementation.

Third, another core concern is that DOE is treating commercial products like residential appliances which can simply be brought home and "plugged in" without the need for field adjustments. Commercial manufacturers believe, however, there are major differences since compared to residential products, commercial units require specialized technicians to test and install them on site; utilize extremely different test procedures; and include a vast number of factory installed options and accessories.

MANUFACTURERS

The specific issues raised by the CRE and HVAC representatives interviewed are set forth below.

CRE

CERTIFICATION

CRE manufacturers strongly supported creating guidelines to group products more effectively to reduce testing burden. In fact, nearly all have a grouping strategy already. One party explained that while they cannot "physically (e.g., laboratory) test 'every conceivable combination,' given they have about 15,000 possible combinations in their catalogue," nonetheless, certification can be accomplished.

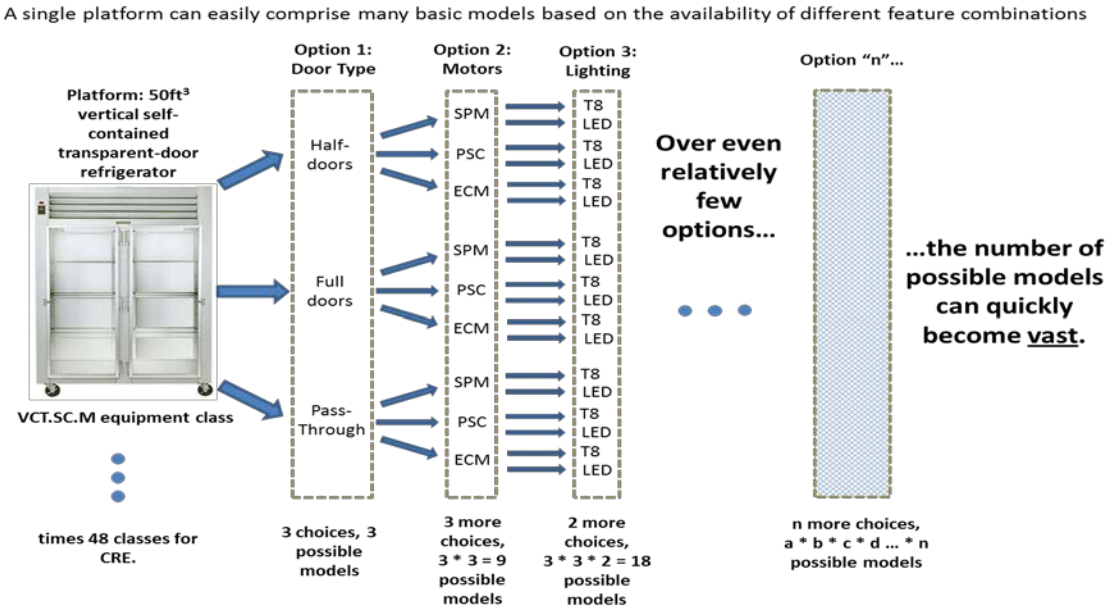


Figure 8: Commercial Refrigeration Equipment – Basic Model Example

Predictably, there are a wide variety of grouping strategies to derive a number of basic models that need to be reported to DOE based on the variety and number of models offered. Nearly all CRE manufacturers used a "conservative" approach to certification by selecting the least efficient model in a group to represent the rating for the entire group of products. For example, grouping could be based on refrigeration system base models to which one adds more efficient features from categories such as the following: lighting, door type, frame heaters, and motors. Another party explained that products could be grouped by families such as "multi-deck cases and island freezers." In addition, thermal load could also be a grouping criterion. But one party who approved of the conservative testing approach noted that the metric used by DOE in its standards includes total display area, so it is not clear that total energy consumption would by itself be the basis for a grouping strategy. Another reported downside to the conservative rating method is that it requires a manufacturer to verbally explain to a customer why actual

performance is superior to its published rating. Consequently, if you must compete based on efficiency, you may have to establish a new basic model.

Some voiced frustration with the December 2012 certification deadline. For instance one party asserted it would "cost" $19M and take 26 years to do 1 year's worth of certifications." Another party stated they are ready to comply with certification for self- contained units, but not for remote equipment; they added they were still waiting for the DOE's CCMS certification template, and needed another six months to comply. On the other hand, one party stated that they were entirely prepared to comply with the deadline now. All agreed that testing effort was a major driver for certification compliance, though the time estimates for testing ranged from one week (minority), while others stated that to conduct tests properly takes four weeks.

Regarding efficiency attributes that do not impact energy efficiency, one party offered the following list: "shelves, materials of the panels (liners), external components, height off of the floor, and color." This issue is also described in the HVAC discussion, below.

Regarding those manufacturers complaining that they cannot certify products to DOE because they have so many different models, one questioned how are they able to certify now because they also have to obtain safety certifications for Underwriters Laboratories (UL) for each of their models.

SAMPLE SIZE

The parties raised sample size as a major issue. On the surface it appeared that the *number* of tests (e.g., at least two) alone was a problem, since only one party acknowledged they do at least two tests. Some said they were planning on completing the testing using two samples by the compliance date. But they often explained further that the number could not be discussed as an isolated variable. For instance, one party said that while they would be "hard pressed" to conduct two tests for every basic model, they would be able to comply if AEDMs and a new certification grouping approach were available, though it would still be an expensive proposition. It should be noted that DOE appears to agree with the benefits of the AEDM proposal. Finally, testing two samples for a custom product is a problem, as further explored below.

CUSTOMIZED PRODUCTS AND TIMING OF CERTIFICATION

Given the requirement for having at least two samples tested, regardless of the size of the product run, all parties that made customized or low-volume units agreed that some kind of exception or separate consideration was needed for such units, including accessories. For example, one party stated that they have only tested two or three low-volume "wedge" cases. "If you are only shipping ~10 units per year, that's not significant in terms of energy impacts, while the testing expense for two samples, which is spread across the ten units, is quite expensive." Most parties, however, did not offer clear ideas regarding how to draw a line regarding the criteria or thresholds for an exemption. One party suggested DOE consider how custom products are handled in other countries, including Canada, Australia, and New Zealand.[34]

[34] For example of international treatment of customization, see *Energy Performance Standard for Refrigerated Display Cabinets* (merchandisers), Canadian Standards Association, C657-12, August 2012.

Another party questioned whether progress on groupings and AEDMs in a future proceeding would address customized product testing. One stated that for AEDMs, maybe not because they still need to qualify the AEDM and that involves a lot of work. An appropriate grouping strategy could help resolve the issue, but they would have to check to see how different the performance of a particular unit is compared to the standard and make a decision.

Regarding timing of certification, one party suggested that for small production models, they would like to certify those products in the CCMS system at the same time they are creating the unit for delivery to a customer.

AEDMS

All parties agreed that having an AEDM requirement in place will greatly simplify the certification burden. According to one party who was typical of others in the CRE industry, "[n]ot having an AEDM to reduce testing burden is a 'show stopper' because testing all unique models would be impossible." Manufacturers were, indeed, anxious about when the AEDM rule would be finalized, since they were "hoping that by the December 31, 2012 certification deadline the AEDM rule would be put in place. They would be in pretty good shape if they had the AEDM and grouping (e.g., basic model) idea in place." But only about one half of CRE representatives had developed an AEDM (e.g., addressing changes to lighting, case lengths, Btu loadings). Some questioned whether AEDMs would fully solve the basic model problem, since they will not necessarily cover all products and they are used only as a "general guideline, as opposed to one for specific units." Others again noted the interplay between AEDMs and other issues. For instance, as one put it, "[i]f a basic model is anything that increases energy consumption, they would want to calculate the energy consumption using an AEDM" due to the lower testing burden. Finally, regarding timing of certifying products before they are introduced into commerce, AEDMs would work for them even if introducing into commerce is interpreted as "before selling the first unit to a customer."

TESTING

Many parties stated that DOE must have some accommodation for testing tolerances. Although some of the larger manufacturers would be more likely to accept a more stringent testing tolerance (statistics tolerance) for certification based on them having the resources to do the testing, not all manufacturers agreed with this view. For tolerances (test procedure operating condition range), one party said they try to be stricter in their labs in order to have better results than the ASHRAE test method. A couple of parties agreed DOE's 5% testing tolerance (statistics tolerance) is acceptable. A wide array of test variability were reported ranging from: 4-5% on the same unit from one test to another; 8-9% difference even within the acceptable temperature and humidity ranges in the test procedure; and ~13-15% of energy consumption based solely on manufacturing using three of the same units. One noted that labs do not test remote units as easily as self contained units. One party discussed a process for accounting for variability, which involves using the worst of three tests as follows: If the "pre-production" energy consumption is off by >10% of the prototype, they discount the prototype's energy consumption rating. If the full production energy consumption is off by >5% of the "pre-production" energy consumption

rating, they do analysis to investigate the issues. One party claimed they would be fine with "testing everything" as it would keep poor performers out of market.

The parties described the methods they use and other observations:

- They test near the mid-point conditions for temperature and humidity.
- They test every product they make for National Sanitation Foundation (NSF) Standard 7.
- They add some cushion factor to address variability.
- The 8-hour door opening requirement that may not be appropriate for freezers, while a 16-hour requirement would be better, though this raises data comparability problems.
- High volume units get more physical testing and they are more confident with a lower safety factor.

Regarding third-party lab testing and tolerances (lab-to-lab variability), one party claimed that compared to submission of data in the certification process, the most problematic part of the entire process is the uncertainty of the repeatability of third-party testing. First, if DOE's interpretation of the third-party lab test procedure is different than that of manufacturers it could be a problem. Second, anything that could cause such labs to interpret the method differently is a problem. They have not done comparative testing at different labs.

VICPs

One party was aware of only one CRE manufacturer participating in AHRI's certification program, though they were not identified. Most CRE parties are fine with submitting certifications directly to DOE. One party explained that they chose not to be a member of AHRI since AHRI requests companies to report sales data, but they do not want that data shared with other AHRI members. Instead of paying membership fees, they utilize that money for in-house testing.

COMMERCIAL HVAC, COMMERCIAL BOILERS, AND COMMERCIAL HOT WATER HEATERS

Nearly all commercial HVAC manufacturers are participants in the AHRI directory of certified product performance. AHRI's membership for advocacy purposes, as opposed to product certification, includes the vast majority of US manufacturers of commercial HVAC equipment and water heaters, as well as manufacturers of CRE.

CERTIFICATION

Many aspects to certification were raised by the parties. A key challenge presented was that manufacturers may have millions or billions of unique possible combinations of products based on various components and options available, but they all acknowledged that the actual number of basic models is substantially lower (e.g., 400) since those basic models vary only with respect to differences in efficiency. First, regarding basic model, nearly all parties favored some type of grouping concept that would lower testing and related certification submittal burden, and most of those supported the concept utilized by AHRI (e.g., BMG). Some believe that DOE should explain why the BMG (e.g., having a unique refrigeration system as a basis for grouping) is not feasible as a starting point for negotiations. Some supported using EER or capacity as a means of grouping models for the purpose of certification. But one party said they test everything, so they

see no benefit with any grouping strategy. A related issue is the consequence of failing a rating and whether it is fair to have a whole group fail if one unit in the group fails. Most agree that the concept of one unit "sinking the whole ship" makes sense, and is consistent with AHRI's practice. But not everyone agreed.

The most common strategy described was to use the most conservative product (least efficient, without any high efficiency options) in a given group as the basis for rating the entire group (as also noted in CRE discussion, above). Nearly all parties said they could identify such units within the group that would support a conservative strategy. But some noted that the negative tradeoff of such a strategy is the inability to tell customers or advertise the true efficiency of some of the units in the group, which are higher than their rating. To compete on efficiency you would have to submit a different certification for each such unit. One party explained that the conservative strategy could be employed in different ways. For example, if the test results support a rating of 9.25 EER, they might rate it a 9.0 EER, but a more sophisticated entity could rate it as a 9.2 EER. There is also a unit scaling consideration, since while "1/10th of an EER would not matter for a larger capacity unit, for a smaller capacity unit it would matter." They, therefore, suggested consideration of a sliding scale to address capacity.

HVAC representatives also explained which factors did and did not impact efficiency for certification purposes. Items mentioned that impact energy use include motor type, base refrigeration system, hot-gas bypass, and expansion valves. One stated DOE should not consider some options and accessories, such as filters, voltage, phase, damper motors, and coated coils. They suggested rating just the basic machines without accessories, which is the current grouping practice. But it would be more difficult to determine how to address controls and options, such as dehumidifiers, economizers, energy recovery wheels, and recovery ventilators. Other non-energy consumption attributes mentioned were paint, bird screens and certain building management controls. But one party thought rating a new model that is more than, say, 0.2 EER different compared to another model makes sense. And manufacturers should not be punished for such differences (within 0.2 EER) considering that in the field there are considerably larger differences in efficiency as a result of installation practices (e.g., refrigerant piping, air flow configuration and improper installation) that make the 0.2 EER differences negligible.

Most of the AHRI members stated they needed more time to meet the December 31, 2012 certification deadline, and some supported AHRI's proposal to extend it 18 months past the AEDM rulemaking's effective date. Many said they could meet the deadline using AHRI's definition of BMG, but not DOE's basic model definition. One asserted that even using more permissive grouping strategies and AEDMs, it would be difficult to meet this deadline. Regarding the level of effort required to meet the deadline, one stated that they were working at a "furious pace" to meet it. Another stated that it would take them five years and $5 million to complete all the testing using DOE's definition of basic model, and this estimate also requires shutting down their manufacturing production.

There were two other unique comments. First, one party noted that private labelers are importers and are legally responsible to ensure proper product certification. But they do not have access to CCMS data, though AHRI's directory is public. Broadening the scope of public access to CCMS would help them conduct compliance assurance.

SAMPLE SIZE

About half of those interviewed said they test one sample of a given BMG based on the AHRI requirements, while other parties reported that they test two or three. However, three of these parties test two units in a BMG (e.g., smallest and largest cabinet) and interpolate results to the units in between, sometimes using simulations to calculate those ratings (e.g., estimating CFMs). Another party explained that if they could run only one test they could simply assign a tolerance (a cushion) of 5% to their ratings, depending on how close they are to the standard. One noted they test all mini-splits and one-to-one units, while another explained they test air conditioners and heat pumps separately. Regarding the various possible combinations and options, one stated they do some testing on these as well.

CUSTOMIZED PRODUCTS AND TIMING OF CERTIFICATION

Overall, fewer parties voiced opinions or concerns regarding customization compared to CRE. Two manufacturers stated that they did a large amount of business with customized units. One party said the amount was "extreme," while the other said it constituted 50% of their sales. Two others said they did no custom work. One party said larger units are made to order and not kept in stock. In addition, given that custom units can cost $50,000 each, testing two of each would be expensive, and normally they cannot be sold afterwards. As a result, one manufacturer tested burners multiple times while using the same storage tank. According to another, custom units would be grouped into one of the established groups and share the same rating as those in the group. One party raised the challenge that any provision for exceptions could "swallow the rule" itself.

Regarding the distribution in commerce requirements, nobody from the HVAC sector objected to these regulations. One party, however, acknowledged there may be a difference in how this concept is interpreted that should be explored. Another said they are fine with these requirements since they conduct their due diligence by this point. Before they make a sale, another offered, they provide test data to AHRI, who does a qualification test before the unit is accepted into the AHRI certification directory. Then upon acceptance by AHRI they can sell the product. One party explained that they first development test a family of products. The pre-announced prototype is advertised in literature. As they get closer to the actual manufacturing date, they send their ratings to AHRI.

AEDMS

Most parties stated they support the AEDM concept, but most do not currently have one ready for use. One stated that as a general rule, smaller manufacturers do not have these simulation tools. Regarding applicability, a couple of parties noted that AEDMs were appropriate for non-standard units and accessories. Yet another stated they were not well suited for PTACs. Another asserted that AEDMs would not be needed if the number of basic models could be reduced. Some parties who did not have formal AEDMs stated that they nonetheless use various software packages for some calculations (e.g., from Oak Ridge National Labs). A few parties raised substantive issues with AEDMs. First, one stated that preapproval by DOE should not be

required. Second, DOE's requirement that AEDMs be qualified to within 5% is "too much for them to take on." Another party stated that AEDMs will not solve all their concerns with certification since it would still take 15 years to run all their ratings. This party planned, however, to eventually use AEDMs for all their certifications.

TESTING

According to most parties, testing and certification are linked based on testing costs. A manufacturer illustrated this point as follows: "[t]esting is what worries them, not providing data to AHRI." It might cost them $20,000 for two tests under the AHRI program – $10,000 per test, one each for the smallest and largest (e.g., out of ten units in a BMG). But after DOE certification requirements take effect, "it might cost them $200,000 for twenty tests – all ten sizes times two tests for each unit." A small business noted that they already pay a lot for tests, so testing two units is problematic. AHRI's verification testing costs them about $10,000 per test and $5,000-$6,000 for the equipment. For this reason and others noted below on tolerances, testing is deemed a divisive issue.

The second major issue was testing tolerances or variability. Several noted that variability comes at all stages: manufacturing (e.g., 2% - 3%), components (e.g., 2% - 3%) and testing labs (e.g., up to 8%). But one asserted there would be major costs from moving from 5%, the widely supported verification tolerance standard used by AHRI, to 0% assessment tolerance that DOE's program would use. Another party stated that the best testing tolerance (test procedure operating condition range) achievable is 2.5%. Some were concerned about how settings are adjusted during tests, which may cause them to fail. A related issue raised was how options and accessories are treated. Right now, these are not accounted for in testing.

A few other miscellaneous concerns were raised. First, one party sought clarity on indoor and outdoor CFM values to be used for testing purposes (as specified in I&O manuals), and encouraged DOE to allow looking also at the technical literature and not "just what is packaged in the box." Second, regarding repeatability requirements, DOE needs to provide explicit guidance on recourse for manufacturers, such as whether they can be present for a test and/or have a meeting with DOE to discuss the matter.

VICPs

The vast majority of the HVAC sector submits certifications directly to AHRI, though a couple of parties submit data both to AHRI and DOE (e.g., large customized product). Most parties who submit data directly to AHRI are satisfied with the process. Several expressed some variation on the theme that the AHRI program is well established and should be formally recognized by DOE as a valid VICP; therefore, "if it's not broken, why fix it?" While one expressed satisfaction with AHRI's program, they acknowledged that there is always room for improvement. Another sought consistency between the two programs. Many who objected to submitting certifications to DOE did not do so in the abstract; instead, they also opposed DOE requirement of needing two test samples, as noted above. One party was concerned they would have to do "double work" to certify to both AHRI and DOE. When there is non-compliance discovered under the AHRI program, one explained, one needs to follow the AHRI guidelines to correct problems. One manufacturer explained that these typically occur during the early phase of product development.

END USERS

End users of HVAC and CRE are concerned with certification and testing due to their substantial operating costs based on energy consumption. For example, one end user estimated that out of total energy use, CRE consumes 55%, while HVAC consumes 18%. For another end user, whose annual energy bill was approximately $850 million in the US, HVAC consumes 30-40%, while CRE consumes 8-15%.

IMPACTS OF CERTIFICATION

End users of HVAC and CRE products, including distributors, while not directly regulated by DOE, discussed their concerns related to how changes to the requirements could impact them. All end users agreed that if the new sampling regulations requiring at least two samples are finalized, as opposed to one as AHRI and most manufacturers now employ–the timing of product availability would be delayed. One party stated this was a big concern since investments in new equipment are costly, and the quicker the new equipment can be deployed, the quicker the end users can recoup their investment. For example, if a facility or store is being opened or remodeled, and they cannot open on time, new funding streams are delayed until the equipment is up and running. Also, end users unanimously agreed that additional testing would result in price changes and such costs would be passed along to customers.

The parties discussed whether efficiency gains were possible through the certification process. One asserted the answer was yes, if testing tolerances (test procedure operating condition range) were tightened. Testing tolerances need to be tightened because components may not meet specifications. Another agreed, but for a different reason. The party stated that there could be unintended efficiency gains. Some products are more efficient than they say due to conservative claims made in literature, and yet they are fine using a conservative number as long as they gain the efficiencies reported or it pays back per the analysis. But if they gain more in efficiency that is "a plus."

CUSTOMIZED PRODUCTS

The parties explained the importance of the customization process and how end users and manufacturers work together to ensure specialized products meet specifications. Customized units include low-volume products; however, one of the end users described low volume as being about 100 units, while others would consider numbers as low as single units. Optimizing customization was deemed important by most regarding marketing and sales to retail consumers (e.g., food stores). Among the most important factors in the buying decision, for catalogue purchases and customized product, is energy efficiency. While it has been important for many years, three parties described efficiency being elevated over the last five years as it as an effective means of lowering operating costs given how long products last. Another said efficiency dovetailed with green initiatives, such as reducing or neutralizing the carbon footprint of their facilities.

All end users stated that a proportion of their HVAC and CRE products are customized, though the percentage varied. For example, one party explained that 30-35% of total product is custom, which is broken down as follows: 10-15% HVAC and 85-90% CRE. But according to this party, the reason for seeking improved efficiency in customization was less than 5% of the total. Another party claimed that their overall percentage of customized product was 35%, which was broken down by evenly between HVAC (50%) and CRE (50%). However, this party claimed that 95% of requested customization is based on maintenance and energy efficiency. A third end user claimed 33% of their product was customized based on number of units, though they indicated that others metrics could be first cost and energy use. This party broke down their custom units between HVAC 12% and CRE 33% - 50%. Of the HVAC units 85% of customized products were purchased based on functionality and costs issues; 10% due to "form and fit" requirements within constrained spaces; and 5% due to cosmetic issues. Of their CRE units 30% were customized based on functionality and cost; 60-65% on form and fit; and 5-10% on cosmetics.

While customization may appear to constitute a small percentage of the overall products being utilized in any given facility, many customized products, once performance is verified, can be deployed at a large scale across scores of end user locations. For instance, one party offered that 85% of HVAC and 5% of CRE product now being utilized in their locations started out as customized product. Another party mentioned that less than 5% of HVAC and about 10% of CRE began as customized product. In any event, it appears that customization is a valuable, even critical, service for many end users. And it also is an important means of business development for manufacturers given that it offers them a chance to maintain or develop a working relationship based on their current/future clients' product needs.

All end users stated it was important for them to freely communicate with the manufacturers to explore R & D and customization options prior to purchasing a product. Another party stated that they often field test product and share monitoring data with manufacturers. Often the product is provided for free. Regarding the relationship between manufacturers and end users, conversations on customization typically range from three to six months, though the precise time depends on the technology. But one party stated they are in "constant contact" with manufacturers, and the product development cycle can be from nine months to three years in length. This end user described its multi-phase testing program, which involves testing both at the manufacturing facility and in the field. While the second phase might involve 6-12 tests, during pre-production, many more are tested in the field. The performance specifications of these products are typically agreed upon through a contract, and manufacturers typically agree to meet the requirements or replace the equipment.

EFFICIENCY MONITORING

End users discussed the importance of their companies "getting what you paid for" in terms of energy efficiency. At the outset, one noted that larger companies with multiple locations were more concerned about this than independently-owned stores, and such larger entities would "be mad" if they discovered that units did not truly meet efficiency standards. Regarding proving performance specifications have been met, another party explained that they conduct extensive on-site sub-metering on product electricity use, including field testing, before they buy a product

in volume. One party stated they are now installing metering to track efficiency, but it is not part of the contract with manufacturers.

AEDMs

One party noted that using AEDMs make sense on lower-volume product, but not for higher volume products.

TESTING TOLERANCES

Testing tolerances (test procedure operating condition range) should be put on the table, since lab conditions are one thing, but then we might need system performance boosted based on operational environments (e.g., ambient air hotter in kitchen, prep room requires lower temperature for CRE units, or workers chronically leaving coolers open). This appears to be the most challenging issue of all.

ADVOCACY ORGANIZATIONS[35]

CERTIFICATION BENEFITS

Environmental efficiency advocates cited the important environmental benefits of DOE's program. They applauded DOE's interest in leveling the playing field between competitors and discouraging cheating to ensure energy savings required by law are being achieved. If non-compliance is occurring then efficiency is being compromised, though they acknowledged how one measures such "leakage" is difficult. They stated that DOE's program needs to allow DOE to adequately assess compliance, create transparency to allow for citizens to help enforce its requirements, and allow end users to compare products. In their view, efficiency standards for some products have increased dramatically, but further increases may not be practical or may come at the expense of R & D for next generation, higher-efficiency products. However, the process of ensuring compliance should be examined further. In addition, they voiced frustration that there are no certification requirements in place for these commercial products after all this time.

BASIC MODEL

They agreed that it is likely to be easier for DOE to build on existing product-specific definitions than try to fit all products into a single DOE concept. For example, there could be a product "family" with many common elements but different energy outputs. They questioned, however,

"[i]f that output (capacity) scales in a well-behaved way (e.g., linearly, or with efficiency constant with increasing size), should that product "family" be part of the same "basic model?"

[35] Given that nearly all positions among the advocacy community, covering both efficiency and enforcement concerns, were jointly held, such views are discussed jointly (e.g., they), unless otherwise noted. States were not among those participating in the interview process.

VICPs

VICPs should play a role in compliance because as one stated, "DOE cannot police the entire industry." They do not favor DOE's certification system over using a VICP. They agreed that 10 CFR 431.174 provided a vehicle by which product manufacturers could develop VICPs that would be accepted by DOE. But 431.174 has been removed, which would seem to have the effect of requiring products to be tested to DOE's regulations. They asked what the problem is that would require this change. They also voiced concern that removing the provision may "introduce new problems that will be expensive to solve, without commensurately improving information reliability or energy savings for consumers." They noted, however, that they had not noticed the removal of 431.174 previously in the CCE rulemaking, but had they been aware of it "we would have raised this earlier." A VICP should be acceptable if it: (1) ensures a level playing field and prevents sales of non-compliant products; (2) is accessible to manufacturers who choose not to join a trade association; and (3) avoids a VICP monopoly. The issues discussed below are related to the concerns raised above about section 431.174.

AEDMs

AEDMs are acceptable if they can be verified. If DOE can come up with an AEDM that a whole sector of industry can use that would be helpful. AEDMs, with an appropriate enforcement program, need to be on the table because they appear to be part of the certification compliance solution. Providing open source compliance software for manufacturers to use to calibrate with their own design models could be quite valuable. In the future, numbers of models are likely to rise to address niche options that end users demand. AEDMs will, therefore, become increasingly important as proxies to lab testing. This issue was also discussed in the context of the December 31, 2012 certification deadline, as noted below.

TIMING

The deadline should be on the table to allow for AEDM use. One party asked what energy savings are at risk by product class if manufacturers do not meet the deadline?

SAMPLE SIZE

"We completely agree with DOE that CCE must test enough products to provide adequate assurance that random units sold in the market comply with the law. We are less certain that the current DOE regulations are the only way to provide the necessary assurance. Current regulations require testing at least two samples from each 'basic model.' This is hard to do for highly specialized, made-to-order products - and may not be necessary." They said they did not care if manufacturers are testing one or five products as long as they are meeting the standard.

TESTING TOLERANCES

There are two reasons to put this issue on the table: (1) to ensure the consumer is getting his/her money's worth; and (2) if this is an important issue to industry it should be discussed. But they also noted that tolerances are a complex issue, in part because of the varying tolerances (test

procedure operating condition range) allowed for different instruments in the test set-up process. And while it appears that the values chosen were stringent but not onerous when the tests were set up, since then, some test equipment has improved. As a result, a party "with great test equipment and a tight manufacturing culture might be able to game the system a bit by using the allowed equipment tolerances to get barely passing equipment almost all the time, with even lower (but still legal) median acceptable minimum test values."

CUSTOMIZED PRODUCTS

High volume product should be the focus of certification, not low yield "one-off" customized data unless DOE can show there is a certification compliance issue with such products.

TESTING ORGANIZATIONS

Regarding AEDMs, one lab said they were comfortable with the proposal, while the other said AEDMs are good only for a certain range, but not outside of that range. One party stated that they are not engaged with AEDMs, which is the manufacturer's responsibility. But the AEDMs must be validated.

The organizations discussed testing issues and challenges, including sampling. The labs, who are paid by AHRI,[36] rely on its instructions and methods, along with operational and installation manuals. Under the AHRI program, random sampling is conducted by the labs. One lab stated it ran tests on 35 different products for AHRI. One party stated that one of the biggest challenges of testing for manufacturers to certify to DOE is helping them locate the certification requirements. Another stated that the fact that DOE testers cannot communicate with manufacturers creates problems. Some manufacturers, especially the big ones, are fine with DOE's certification statistical calculations. One lab has not heard many complaints on tolerance (test procedure operating condition range) and sample size regarding the AHRI testing program. Regarding challenges to the testing process, the labs explained that as equipment gets more sophisticated it gets harder to run tests. For example, they pointed to variable speed units (e.g., 18 SEER or higher, although this is for residential systems) with sophisticated controls, and one expected there would be even more complex products in the future. Both parties noted there are issues regarding the merits of testing sampling quality versus quantity. But they noted that if you had a bad component, testing the same unit twice will give you the same result.

PROCEDURAL ISSUES

Strong Overall Support. With some qualifications and suggestions, *all* parties thought a reg neg was worth trying, and nobody opposed its use. Indeed, many saw DOE's willingness to explore reg neg through the convening as a positive and encouraging sign. Many thought reg neg was superior for these matters compared to the ordinary notice and comment because of the complexity and interrelated nature of the issues. For example, one party stated that the notice and comment process was not the best forum for the CCE and AEDM rulemakings, and that is why "there have been false starts" on those matters. Another mentioned that industry is accustomed

[36] DOE also contracts with labs for its enforcement testing program.

to participating in various committees to draft private standards, so this negotiation process is familiar to them. Moreover, despite some competing interests, people can be quite creative in such forums. Others pointed to the process as enhancing communication and understanding of the issues between the parties, which would also benefit DOE. It also better addresses trust and communication dynamics, particularly between DOE and industry, as discussed in more detail below.

Likelihood of Success Related to Scope. Without exception, all private parties — manufacturers, end users, and advocacy groups — agreed that the scope of a reg neg needs to be expanded. Such an expansion would, in their view, maximize the chances of reaching a consensus. One party who also agreed a wider scope was preferable noted, however, that there is a very good chance of getting a consensus, even if the scope was limited to certifying for compliance.

The scope expansion recommended by the parties has three levels:

- First, a party noted the DOE's initial posture that it was "not re-opening the concept of basic model with respect to the resting and rating requirement" was unrealistic. They did not see "how you can tackle the issue of certification if you do not talk about basic model" (see Figure 6, above).
- Second, as one party noted, DOE should not draw an artificial line to isolate certification from the deadline, AEDM, sampling, and testing issues. As one put it, you cannot separate the four issues. "How can you certify without testing?" Indeed, another party noted that including all these issues using a "holistic approach" enhances the group's ability to understand these issues. Some parties noted that AEDM needs to be in the scope, since it the only means to comply with certification, and both AEDM and certification are fluid concepts; therefore, it goes a long way to resolving the certification issue. Many parties mentioned that testing was an important part of the certification issue, while one called it is "the big elephant in the room" (see Figure 7, above).
- Third, the December 31, 2012 deadline is deemed a critical aspect of the scope to most parties. In their view, it is essential to extend the deadline so that all the pieces can be addressed at once and as a whole.

Once the parties assumed, for arguments sake, that the scope could be expanded, they immediately became more optimistic that the process could lead to a successful outcome. As a prominent practitioner has observed, it is common for parties with substantive differences to also have different opinions on scope compared to the Agency: the view often looks different to those in the private sector.[37] One party stated that if "smart people with open minds got together, all issues could be resolved." Others maintained that with more issues in play, there were opportunities for many key tradeoffs that are crucial to any compromise.

Only three parties of the 40 interviewed were concerned about the chances of success, even if properly scoped, claiming they were "not optimistic" reg neg would be successful. Two of these parties explained their reasoning. The first asked about the definition of consensus and said it is

[37] Philip J. Harter, "Collaboration: The Future of Governance" (Collaboration), *Journal of Dispute Resolution*, 411, footnote 56 (2009)(explaining that parties may prioritize issues differently and that the convening process helps identify these issues as the foundation for use in the negotiations).

impossible to find 100% unanimity, but then agreed that nonetheless reg neg has "a shot" at succeeding because of complex issues that cannot be resolved by ordinary rulemaking.[38] A second person explained that if the issues are properly framed it may result in helping all sides understand the goals and methods. Moreover, while it may not be successful, "the prospects for success are lessened by insisting on the narrowest possible space for discussion."

Improving Relationships. Many cited another important advantage to using reg neg is that it provides an effective means of helping to mend an "unacceptably poor" relationship between industry and DOE. Several industry parties described this relationship as the worst it has been in 20 years based on trust and substantive issues. There is widespread concern that DOE's recent policies and enforcement strategies have ignored industry's major needs by dismissing the merits of industry practices that have been effective in policing manufacturers, without necessarily making progress toward accomplishing any of DOE's own goals. Moreover, the recent CCE deadline is seen as unreasonable without AEDMs and/or a better explanation from DOE regarding what is an acceptable basic model. Despite these negative perceptions of the relationship there is a feeling that it is in everyone's best interest to work together since DOE and industry have to "peacefully coexist." Others went further and said with the right scope and success using the process, DOE has the opportunity to "transform" its relationship with industry. The parties are not suggesting the Agency should cave in to their demands, only to be flexible in how it works with others to achieve its goals: Everyone recognizes that it is in everyone's interest to develop a mutually acceptable and effective program that will achieve the statutory goals.

Setting the Stage and Dynamics. There were opinions regarding what was needed to set the stage for negotiations, as well as what one could expect once the parties got to the table. While many believe the substantive requirements for certification needed to change, a prerequisite for successful negotiation for many was suspension of the certification deadline while talks are occurring. This was deemed a showing of good faith by DOE and ensures the issues are considered collectively. The process needs to provide an opportunity to resolve ambiguities so that parties do not attempt to arrive at their own interpretations of the meaning of certain requirements. The revised standard needs to focus on areas of major energy savings and not minor areas (e.g., low-volume customization). Still, one stated it would take dedication by all parties to achieve positive results. Others predicted that DOE is likely going to be working with a united caucus of manufacturers and end users.

Role of DOE. A common statement was that DOE needed to be quite active in providing both technical[39] and policy guidance and feedback during the negotiations for this process to be a success. Indeed, as Philip Harter has explained, the need for the Agency to be an active participant may appear counterintuitive, but being passive typically "inhibits the committee from

[38] It is quite common in convenings for the parties being interviewed to express doubts regarding the likelihood a consensus process can be effective. Beyond their own experiences with the Agency and other parties, including the substantive issues, this reflects the fact that these are complex, contentious issues. Issues of such character, however, are, subject to a successful convening indicating the likelihood of consensus is high, well suited to a reg neg approach.

[39] *Collaboration* at 442 (describing the importance of government expertise in reg negs and the role of senior officials).

reaching agreement."[40] The other common statement was DOE needs to show flexibility and be open minded. To be clear, the need for open-mindedness and flexibility *does not mean* that the DOE should modify its substantive goals but rather how it works to achieve them.

Importantly, these concerns go to the potential for an effective rulemaking whether or not the rule is negotiated or developed through traditional notice and comment. Their clear implication is that a narrowly drawn proposal will like suffer the same limitations as earlier efforts.

INTERESTS TO INCLUDE

Various opinions were expressed regarding what interests need to be at the table. For example, a few parties saw the need for DOE and industry to be at the negotiating table, but they questioned whether anyone else needed to be. One party voiced concern that environmental advocates would have a disproportionate amount of power, and this could hurt the likelihood of consensus. Another questioned the interests of distributors in this matter. Others saw end users as important players to include.

The parties who thought testing should be on the agenda agreed that testing labs should be involved in the negotiations. There were different opinions, however, regarding precisely what the labs' interest is, and some noted they have a financial stake in running more tests. But another party noted it would be impossible for them to do the testing for a huge amount of new tests that could be required under a DOE basic model definition. Regardless of whether labs are considered true parties with a vested interest in the outcome, they could, some suggested, be called upon to answer questions and research certain issues. For example, if the committee wanted ideas for addressing testing tolerances (test procedure operating condition range), they could suggest additional requirements, like tighter controls or better testing instrumentation. But they would not be able to indicate how many units would pass or fail based on various levels of tolerance. In sum, an appropriate role could be that of technical advisor to the committee.

IV. CONCLUSIONS AND RECOMMENDATION

FEASIBILITY OF NEGOTIATED RULEMAKING

With the proper scope of issues on the table a negotiated rulemaking appears to have a good likelihood of achieving consensus on a CRE and HVAC rule based on the factors set forth in the Negotiated Rulemaking Act.[41] A major reason why consensus is likely is that the parties believe reg neg is superior to notice and comment rulemaking for these issues. The Act sets out the criteria an agency needs to consider in deciding whether a particular rule could be developed using a negotiated rulemaking process. These factors are whether: (1) there is a need for the rule; (2) there are a limited number of identifiable interests significantly affected by the rule; (3) a committee can be created with balanced representation who can represent the identified

[40] *Collaboration* at 431-432 (noting that a passive posture by the Agency prevents parties from understanding their best alternative to a negotiated agreement (BATNA), should negotiations fail, and this prevents parties from being able to judge whether proposals benefit them or not in negotiations, though they often "keep talking" to obtain clarity from the Agency but ultimately, "do not converge."

[41] 5 U.S.C. § 563.

interests and can negotiate in good faith; (4) consensus on the issues appears likely; (5) the reg neg will not unduly delay the issuance of the rule; (6) the agency has resources and is willing to assist the Negotiated Rulemaking Committee; and (7) the agency, within the constraints of the law, will use the committee's consensus as the basis of the rule for notice-and-comment. These seven factors are augmented by other non-statutory factors used by conveners, and are discussed directly below.

Nature of This Dispute. First, at the outset, to properly analyze these seven factors, particularly what interests are "significantly affected" the convener must understand the scope and nature of the issues. And while, as noted above, it is common for there to be a difference of opinion on the scope between an Agency and the parties, the gap between the two here appears quite large (see Figure 7). This dispute centers at the outset, not of the divergent opinions of various parties, but on the scope of issues that should be on the table. And layered on top of the scope issues are substantive differences in opinion between DOE and its stakeholders. Second, unlike other reg negs that are distributive in nature and tend to divide the industry based on how a new standard or efficiency "number" impacts their market share, this dispute does not divide its stakeholders on the substantive issues to a great degree. Rather, the stakeholders are asking DOE to broadly review its entire enforcement program. Third, another important characteristic at play here is the great degree of regulatory uncertainty due to the upcoming deadline and the uncertain status of the AEDM rule. As noted above, this convening analysis must necessarily assume the absence of an AEDM rule. Consequently, there are three potential options should DOE wish to explore this matter further.

A. Conduct Reg Neg with Scope Suggested by DOE

Only one party thought addressing certification alone would be worthwhile. And while all parties interviewed seemed reluctant to dismiss DOE's scope for a reg neg on its own terms, it was clear they seemed confused by DOE's intentions in extending an offer to collaborate on this issue, but doing so with a confined scope. The parties believe, in sum, that they are receiving mixed messages. Given the upcoming certification deadline, there is a sense of fear and urgency regarding what DOE might do left to their own devices. In other words, industry would likely be reluctant participants in the discussions. And even if a committee could be successful in addressing this sole issue, this would not resolve the core issues of how to comply with the certification requirements given the uncertainty on what constitutes a basic model, including the other issues industry deems important (e.g., AEDMs, sample size, and test tolerances). Therefore, there is an extremely high risk that a reg neg addressing this sole issue would fail. Failure might carry a high price, since any trust that was built during the convening stage and potential negotiations would be damaged, since the stakeholders might feel their needs to discuss a broader array of interrelated program issues are being ignored. Moreover, such parties might be reluctant to engage in a collaborative process with DOE in the future.

In addition to these practical concerns, based on the reg neg factors, this option also has a high risk of failure stemming from two factors: first, the stakeholders perceive no need for the particular rule as currently defined by DOE. Second, there is an extremely low likelihood of success. Indeed, as discussed above, this is true whether or not the rule is developed via reg neg or notice and comment.

B. Conduct Reg Neg With Scope Suggested by Stakeholders

If acceptable to DOE, a reg neg covering certification (including the compliance deadline) AEDMs, sample size, and test tolerances, has a far higher likelihood of consensus for the following reasons. First, an irony of the scope difference between DOE and the other parties is that all other parties are remarkably well aligned on nearly all of the four substantive issues. Therefore, the intra-industry divisions that are most challenging based on market share distribution are not a major factor here. Second, all parties feel strongly that the chance of consensus is dramatically higher with all issues in play, partly due to the number of technical tradeoffs possible. Indeed, reg neg practice supports this belief: the process has been remarkably successful addressing multi-faceted issues where there are a significant number of technical tradeoffs and not merely driven by economic considerations. In sum, despite the number of additional issues that would need to be addressed, the synergy and technical complexity of the issues does not create added obstacles that would hinder a consensus.

One potential risk in taking on a scope this broad is that the potential complexity could prolong the reg neg and therefore delay issuance of the rule. There is uncertainty regarding DOE's action (e.g., deadline) that is focusing the attention of the various interests. But uncertainty alone might not prevent delay. The parties seem to uniformly want to resolve this issue expeditiously. A firm deadline needs to be established for the completion of the consultative/consensus phase of the rulemaking. The deadline should be set to enable DOE to meet its schedule by acting on its own through regular rulemaking.

Beyond the risks there are potentially valuable benefits that go beyond the mere possibility of resolving certain core substantive issues. Namely, this process has a chance to repair the relationship between the parties. Despite some parties claiming they felt the relationship was difficult, the same parties admitted the relationship could change. Importantly, as noted above, many said that with the right scope and success using the process, DOE has the opportunity to "transform" its relationship with industry.

Another concern considered here is whether any party needs to compromise a fundamental value.[42] Here, nearly all HVAC participants are members of AHRI's product certification program, and approximately half of those interviewed participate in AHRI's certification *and* verification testing program. Clearly if DOE decided its goal was not to allow VICPs any role in the certification program, then AHRI's business model would be threatened. But, despite their differences, there is no indication that DOE seeks to eliminate AHRI. Therefore, a negotiation about the contours and respective role of DOE and AHRI (and other potential VICPs) is appropriate.

[42] *Collaboration* at 427.

C. Do a Reg Neg, But Only if Prefaced by a Public Meeting to Educate Participants and Address Scope Concerns

One party suggested having a scoping session that was not necessarily part of the reg neg and might occur before a final decision to proceed or not is made. The same party, however, did support a reg neg. Unless DOE has reservations about proceeding with a reg neg, this option does not appear to have any advantage over having a robust, prolonged organizational meeting, so we do not recommend this.

Statutory Factors and Recommendations on Process and Interests. Under these criteria for assessing the likelihood of success, the Convening Team recommends that DOE initiate a negotiated rulemaking process. Despite some disagreement over the certification deadline, most private entities agree that more clarity is needed regarding the definition of basic model; therefore, a new rule is overdue. While the number of significantly impacted entities may be substantial, the number of interests is limited and manageable. Therefore, we believe that qualified representatives can be selected who would speak effectively for the diversity of affected parties. In addition, a balanced committee can be empanelled that represents the diversity of interests. In light of a history of delays in issuing a rule to date, it is possible that using negotiated rulemaking may actually expedite, and not delay, issuance of a rule. No single party or interest appears to have overwhelming influence over the outcome of this process. Consequently, it is unlikely that any one party will be able to achieve their goals without negotiating given the complexity of the issues (e.g., "end run" the process by access to congressional leaders).

The Agency has expressed its willingness to support a negotiated rulemaking committee, and has agreed to employ any resulting consensus as the basis for a notice of proposed rulemaking. The Team concludes that, from all indications, the Agency possesses the commitment to enable the committee as a whole to produce beneficial results.

While the Team believes that negotiations in this setting are likely to be highly productive, reaching full agreement may prove difficult. Hence, we recommend having an organizational meeting to establish groundrules and a substantive agenda for future meetings. Given that we believe these issues can be resolved before a negotiation is commenced, we recommend that DOE proceed with a formal reg neg process described below.

The interests identified in this convening were discussed above. Based on this convening, we recommend that the following interests should be included in the negotiations. Manufacturing concerns of all sizes, including small businesses for both CRE and HVAC, including appropriate trade organization representatives, would receive the following number of seats on the committee: eight (8); end users three (3); environmental groups three (3) (efficiency advocates and those vested in the enforcement and transparency of the requirements).

Many factors noted below need to be considered in assembling a balanced committee. For instance, there is a broad array of product offerings within the manufacturing caucus, including the degree of customization they offer end users. Some interests also differ in the degree to

which they rely on in-house vs. outside testing. In addition, their reliance on existing VICPs is another distinguishing factor. While states were contacted for this analysis, none appeared willing to participate in the interview process. This unwillingness appeared to be strongly influenced by competing priorities and resource issues. Hence, we also recommend two (2) states with varying attributes be offered seats on the committee. The testing labs can clearly add value and technical advice to the deliberations, and we recommend they participate as technical advisors, not committee members.

Parties seeking to participate in a reg neg may assume that having more seats at the table ensures their interest can prevail over the minority view should issues become deadlocked. This view misses the point of how consensus operates.[43] Given that every party has a veto in a consensus-based process, while those most significantly impacted should have broad representation to ensure their points of view and needs are accounted for, they need to understand that the nature of their participation is representational. In fact, they do not represent only themselves, but a broader interest (e.g., CRE). And many parties that are not on the committee (e.g., constituents and technical advisors) can nonetheless participate through their representatives. Participation of each interest has been described as a "wedge," as depicted in Figure 9, below.

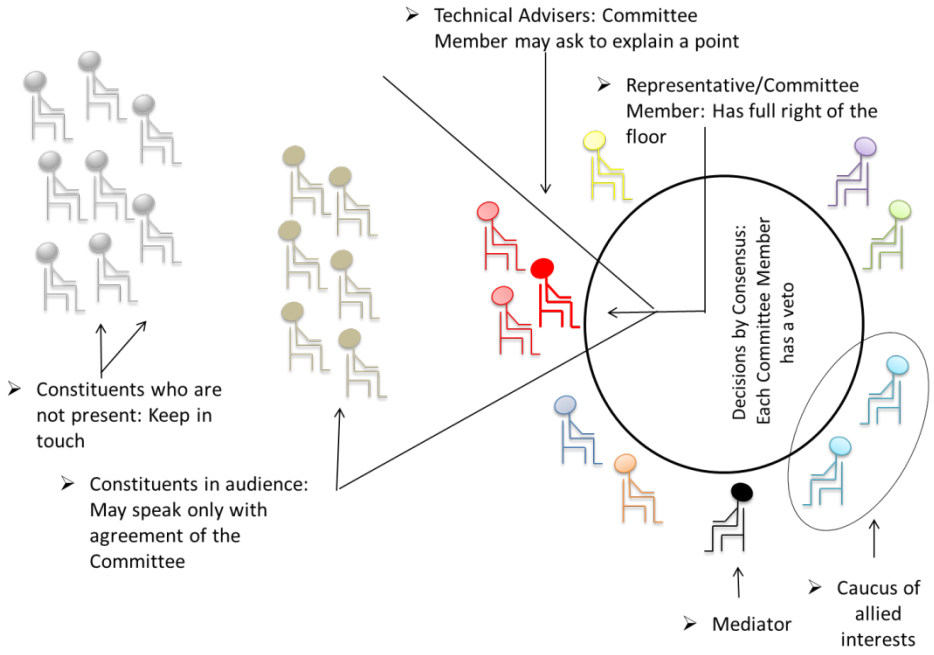


Figure 9: The "Wedge" of Interests (Prepared by Philip J. Harter, 1990)

[43] *Collaboration* at 424 (discussing how representation assures all interests will be raised, which is critical to ensuring minority views are not ignored).

Next Steps

If the Agency decides to move forward with a negotiated rulemaking process, its next official step would be to publish in the *Federal Register* a notice of intent to form a negotiating committee. The Negotiated Rulemaking Act provides that the Agency must then allow 30 days for comments on the proposal and for applications for committee membership.

Regardless of whether it decides an additional public meeting to scope the issues is warranted, the committee should conduct an organizational meeting. At the organizational meeting, committee membership would be finalized; organizational ground rules developed to define how the committee will operate and be structured; the participants would engage in a "scoping session" to develop those issues that need to be considered (and, the flip side: what issues will not be on the table); and the group would identify data that will be needed and consider how it will be developed. After those issues are considered, the committee would decide whether it would be helpful to use work groups to address some issues; the deliberations and suggestions of these work groups would then be reviewed by the committee and integrated into its own decisions. The organizational meeting would also serve to introduce the participants, determine if there are others who should be on the committee, set an agenda for the committee's work, and establish the procedures that will govern subsequent meetings of the negotiated rulemaking committee.

APPENDIX A

THOSE INTERVIEWED DURING CONVENING PROCESS FOR HEATING, VENTILATING AND AIR CONDITIONING EQUIPMENT

Association	NAME
CUACs	
Carrier	John Mandyck Robert Whitwell Mead Rusert Karin Namislo Richard Lord Mark Rabbin
Johnson Controls (York)	Steven Maddox Jeff Nichol
Mitsubishi Electric	Paul Dopple Jay Perkins
Trane	Jordan Doria Jill Hootman
Nordyne	Dan Arnold
Goodman	Gary Clark
Bard	Wes Roan
Rheem	Karen Meyers Keith Grahl Robert Long
PTACs	
Friedrich	David Lingrey
RetroAire/ECR	Dan Adams
SPVUs	
Bard	Wes Roan

Marvair	Thompson Matambo Paul Mechler
Modine	Robert Linstroth
Commercial Furnaces	
Rheem (see above)	
Carrier (see above)	
Trane (see above)	
Heal Controller	Roxanne Scott
Commercial Boilers	
A.O. Smith	Charlie Adams
Lochinvar	Neil Rolph
Trade Associations	
Air Conditioning, Heating and Refrigeration Institute	Karim Amrane David Calabrese Aniruddh Roy Frank Stanonik Bill Tritsis Jon Lemmond
Heating, Air Conditioning & Refrigeration Distributors International	Talbot Gee John Melchi
Test Labs	
Intertek	Mike Stem Mark Menzer Byron Horak Robert Fisher
Underwriters Laboratories	Neil Ferrill Brian Ferriol Mike Kojak Mike Shows

	Claire Kammer Shawn Nelson
Advocates	
American Council for an Energy-Efficient Economy	Harvey Sachs Harry Misuriello Johanna Mauer
Appliance Standards Awareness Project	Andrew Delaski
Earth Justice	Tim Ballo
Northwest Energy Efficiency Alliance	Louis Starr
End Users	
Disney	Martin Cowley
Food Lion	Wayne Rosa
McDonalds	Bob Beecroft Matt Rollins Martin Tyler
Whole Foods	Kathy Loftus

APPENDIX B

THOSE INTERVIEWED DURING CONVENING PROCESS FOR COMMERCIAL REFRIGERATION EQUIPMENT

Association	NAME
CREs	
True Manufacturing	Charlie Hon
Traulsen	Joe Sanders Walt Boryca
Zero Zone	Carl Roberts Dave Morrow Bruce Herlmeier
Manitowoc/Delfield	Rick Seiss
Hill Phoenix	Larry Howington
Hussmann	Ron Shebik Brad Bene
Structural Concepts	Viktor Anderson Jason Paket Rob Date John Murray
Master-Bilt Products	Kenny Owen
Southern Store Fixtures	Massoud Neshan
Trade Associations	
Air Conditioning, Heating and Refrigeration Institute	Karim Amrane David Calabrese Aniruddh Roy Frank Stanonik Bill Tritsis Jon Lemmond

National Association of Convenience Stores	Michael Lawshe John Eichberger Lindsay Kutac
Test Labs	
Intertek	Mike Stem Mark Menzer Byron Horak Robert Fisher Neil Ferrill
Underwriters Laboratories	Brian Ferriol Mike Kojak Mike Shows Claire Kammer Shawn Nelson
Advocates	
American Council for an Energy-Efficient Economy	Harvey Sachs Harry Misuriello Johanna Mauer
Appliance Standards Awareness Project	Andrew Delaski
Earth Justice	Tim Ballo
Northwest Energy Efficiency Alliance	Louis Starr
End Users	
Disney	Martin Cowley
Food Lion	Wayne Rosa
McDonalds	Bob Beecroft Matt Rollins Martin Tyler
Whole Foods	Kathy Loftus

APPENDIX C

US Department of Energy's Regulatory Negotiation Convening on Commercial Certification for Heating, Ventilating, Air-Conditioning, and Refrigeration Equipment
Public Information for Convening Interviews

I. What are the substantive issues DOE seeks to address?

- Strategies for grouping various basic models for purposes of certification;
- Identification of non-efficiency attributes, which do not impact the measured consumption of the equipment as tested by DOE's test procedure;
- The information that is certified to the Department;
- The timing of when the certification should be made relative to distribution in commerce; and
- Alterations to a basic model that would impact the certification.

II. What is a negotiated rulemaking and the convening process?

Negotiated rulemaking (often called "reg neg") is a consensus process governed by the Negotiated Rulemaking Act (NRA)(5 USC §§ 562-570). In a reg neg, a balanced group of stakeholders, chartered as a committee under the Federal Advisory Committee Act (FACA), works with the agency to negotiate text of a notice of proposed rulemaking (NOPR). If a consensus emerges from negotiations, all committee members, including the agency, would agree to support it. Next, a regular notice-and-comment process takes place under the Administrative Procedure Act. While many fewer public comments would likely be received than in an ordinary rulemaking, since most interested entities would have participated in developing the proposal, the agency nevertheless would be required to address any comments in the same manner as with a standard NOPR process.

Prior to deciding to move forward with a reg neg, an agency must determine whether the subject of the rulemaking is appropriate for a reg neg (NRA§ 563). A convening, conducted by a neutral party, the convener, is a feasibility assessment of the likelihood a consensus process can be successful, and it identifies and recommends the key parties to invite to join the committee. Specifically, as provided by the NRA, the convener identifies parties that will be "significantly affected" by the NOPR and assists the agency to determine whether establishing a committee is "feasible and appropriate" (NRA § 563). The convener synthesizes the interviews in a convening report without attribution, to ensure the parties' views can remain confidential. The parties interviewed, however, will be listed in an appendix to the report.

III. What assurances do I have that the convener is a neutral party that will maintain the confidentiality of our communications?

Under the NRA and other legal authorities, confidentiality of the information gathered during the convening is a key cornerstone to ensure success of the process. The convening is a candid exchange between the convener and interested parties, including the agency. The goal of convening is to provide the best data upon which the agency can decide whether and how to proceed with a reg neg.

DOE's policy on the confidentiality of communications with a neutral convener in a reg neg, regardless of whether they are a private contractor or federal employee, is based on the Administrative Dispute Resolution Act (ADRA)(5 USC §§ 571-584). Under the ADRA, the convener of a reg neg is prohibited from disclosing, and cannot be forced to disclose, communications related to the reg neg, with limited exceptions. The ADRA also includes an exception that protects documents held by the convener from disclosure under the Freedom of Information Act. Consequently, based on the ADRA, it is DOE's

policy that the convener's notes and other communications with the parties will not be disclosed to DOE or the public. In addition, as required by the NRA, parties must trust the convener is impartial and independent. In fact, the NRA requires DOE to determine that a neutral convener has "no financial or other interest that would preclude [him] from serving in an impartial and independent manner" (NRA § 568). Based on the desire to ensure the confidentiality of communications with the convener and that the convener is indeed impartial and independent, DOE has chosen to utilize Alan Strasser as the convener. This selection is based on Mr. Strasser's proven experience in the private sector as a neutral convener on several negotiated rulemakings, including an effort in 1999 on residential central air conditioners. Mr. Strasser is currently a regulatory attorney at the Department of Transportation working on detail at DOE. For his detail, Mr. Strasser primarily supports DOE's General Counsel's Office advising on regulatory programs, and on a limited basis has advised on enforcement matters. DOE has determined that Mr. Strasser has "no financial or other interest that would preclude [him] from serving in an impartial and independent manner" (NRA § 568).

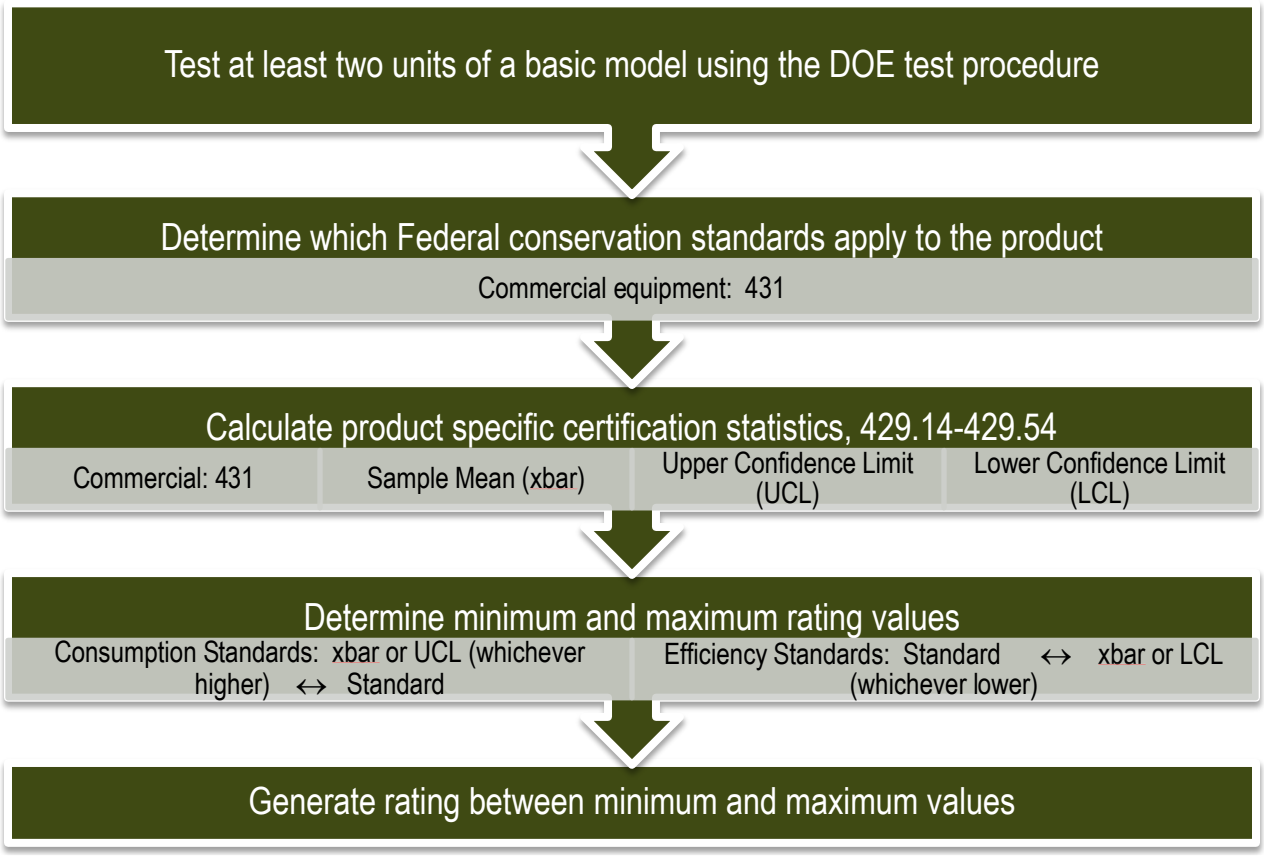
In addition to safeguards outlined above and adopted in DOE's policy based on the NRA and ADRA, DOE has established rigorous communication protocols to ensure Mr. Strasser does not communicate with, nor will be contacted by, any DOE employees regarding the content of the discussions with stakeholders; instead, he will only be able to disclose information presented in the convening report, and only then, in a manner that protects the anonymity of interviewees. Furthermore, DOE has ensured that Mr. Strasser is not assigned to work on any matters regarding the residential or commercial air conditioning industry or the residential or commercial refrigeration equipment industry, and will not work on this rulemaking beyond the convening stage. Finally, DOE has required Mr. Strasser to follow detailed protocols regarding documentation developed or received in the course of the convening. First, he will destroy all personal notes developed during the convening interviews once the convening report is issued to DOE and the public. Second, if federal law requires that Mr. Strasser maintains federal records, they will be maintained in a manner that will ensure that they will not be disclosed. Third, if parties provide documents to Mr. Strasser during the convening process, he will return them upon request once the convening report is issued to DOE and the public. A contractor for the Department of Energy will serve as an assistant to Mr. Strasser in the convening process, and is similarly considered a neutral convener; therefore, s/he is also governed under all the laws and safeguards as described above.

Mr. Strasser's role in the convening process is prescribed by the NRA. He will ask each party questions in order to determine the likelihood the parties can converge on the issues. Beyond attempting to gauge the feasibility of moving forward, Mr. Strasser's questions will also be aimed at defining the subject and scope of the negotiations. Once the issues are identified, Mr. Strasser will ask participants what persons are qualified to "represent the significantly impacted interests" (NRA § 563). Should he recommend to DOE that a reg neg is feasible, he will provide a list of recommended parties who would be empanelled in a committee. Following the interviews, Mr. Strasser will provide a convening report to DOE, all parties that were interviewed, and the public. If DOE wants to move forward with a reg neg, it must then publish a Notice of Intent, which includes an opportunity for comment on membership of the proposed committee and allows any person to apply to be nominated as a committee member. DOE must also file a charter under FACA before it formally establishes a negotiating committee.

IV. Who do I contact for more information?

For questions about the convening process, contact Mr. Strasser, the convener, at 202- 586-8269. For legal questions, contact Daniel Cohen, Assistant General Counsel for Legislation, Regulation and Energy Efficiency, at 202-586-9523.

APPENDIX D



Example

	Efficiency Standard (e.g., CUACs)		Consumption Standard (e.g., CREs)
Sample Data	12.35		12.8
	13		13
	13		13
	12.9		13
			12.9
Mean	12.8125		12.94
Standard Deviation	0.311916121		0.089442719
Standard Error	0.155958061		0.04
Certification			
DOE Standard	13		13
Confidence Interval	0.9		0.9
Cert Divisor	0.95		1.05
t value	1.637744354		1.637744354
LCL	13.21797954	UCL	12.38619978