ENERGY STAR® Dehumidifiers Draft 1 Version 4.0

Stakeholder Webinar and Discussion

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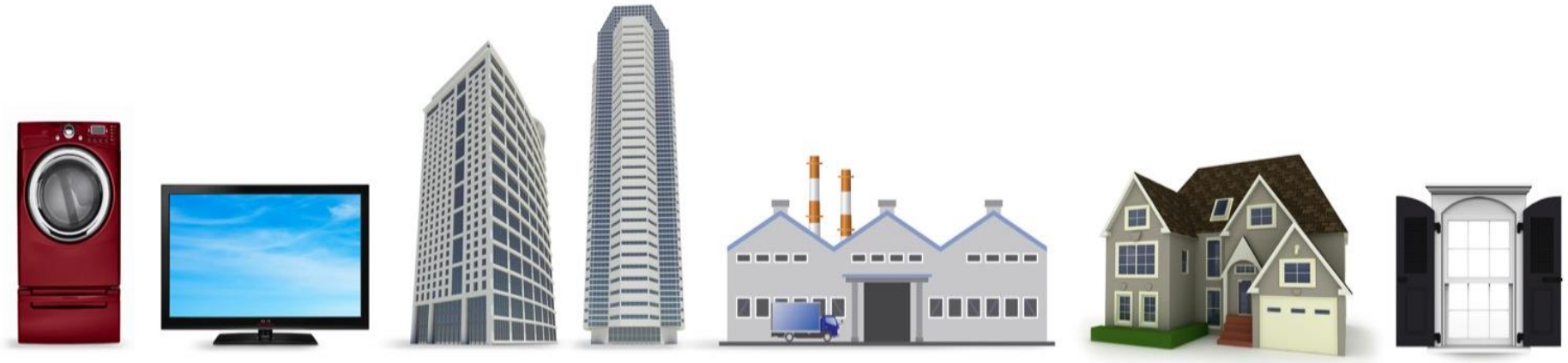
Agenda

- Welcome and Introductions
- ENERGY STAR Program Overview
- Overview of Specification Development Process
- Revision Drivers and Opportunity
- Draft 1 Document Discussion
- Timeline and Next Steps

EPA's ENERGY STAR identifies the most energy-efficient products, buildings, plants, and new homes – all based on the latest government-backed standards.

Today, every ENERGY STAR label is verified by a rigorous third-party certification process.



ENERGY STAR TODAY

Brand Preference & Loyalty

Of the **87% of households** that recognize the ENERGY STAR label

75% recalled purchasing an ENERGY STAR-labeled product in the past year

73% said the label influenced at least one of their purchase decisions very much or somewhat

75% were likely to recommend ENERGY STAR-labeled products to a friend

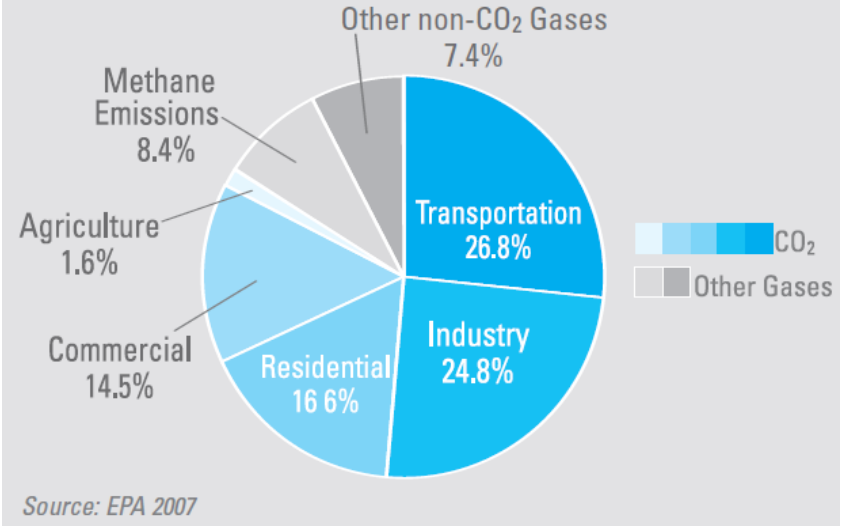
30% were extremely likely to recommend ENERGY STAR

Source: National CEE Household Survey 2012

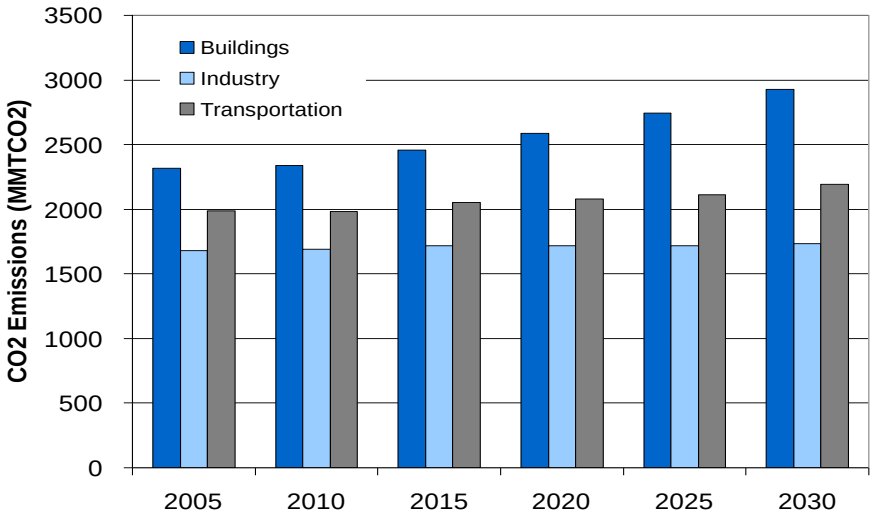

Every single day,
consumers choose
ENERGY STAR
products more than
800,000 times

ENERGY STAR

- Started in 1992; voluntary program
- GOAL: Reduce greenhouse gas (GHG) emissions through large win-win-win opportunities with today's energy efficient technologies and practices.
- Provide credible information to buyers
- Work with the marketplace to capitalize on motivations of individuals



Projected GHG Emissions from Key Sectors through 2030



Source: AEO 2008

Lighting
CFLs
SSL
Integral LED lamps
Residential light fixtures

Home Envelope
Roof products
Windows/Doors

Heating & Cooling
Central AC
Heat pumps
Boilers
Furnaces
Ceiling fans
Room AC
Ventilating fans
Water Heaters

Office Equipment
Computers*
Monitors*
Printers*
Copiers*
Scanners*
Fax machines*
Multi-function Devices*
Servers*
UPS

Commercial Food Service
Dishwashers
Refrigerators
Freezers
Ice Machines
Fryers
Steamers
Hot Food Holding Cabinets
Griddles
Ovens
Vending machines

Appliances
Clothes washers
Clothes dryers
Dishwashers
Refrigerators
Dehumidifiers
Air cleaners
Water coolers

Home Electronics
Cordless phones
TV
Set Top boxes
Home audio

Other
Pool Pumps

* = Covered by EU agreement

Specification Development Cycle

Important Process Elements

- Consistency
- Transparency
- Inclusiveness
- Responsiveness
- Clarity

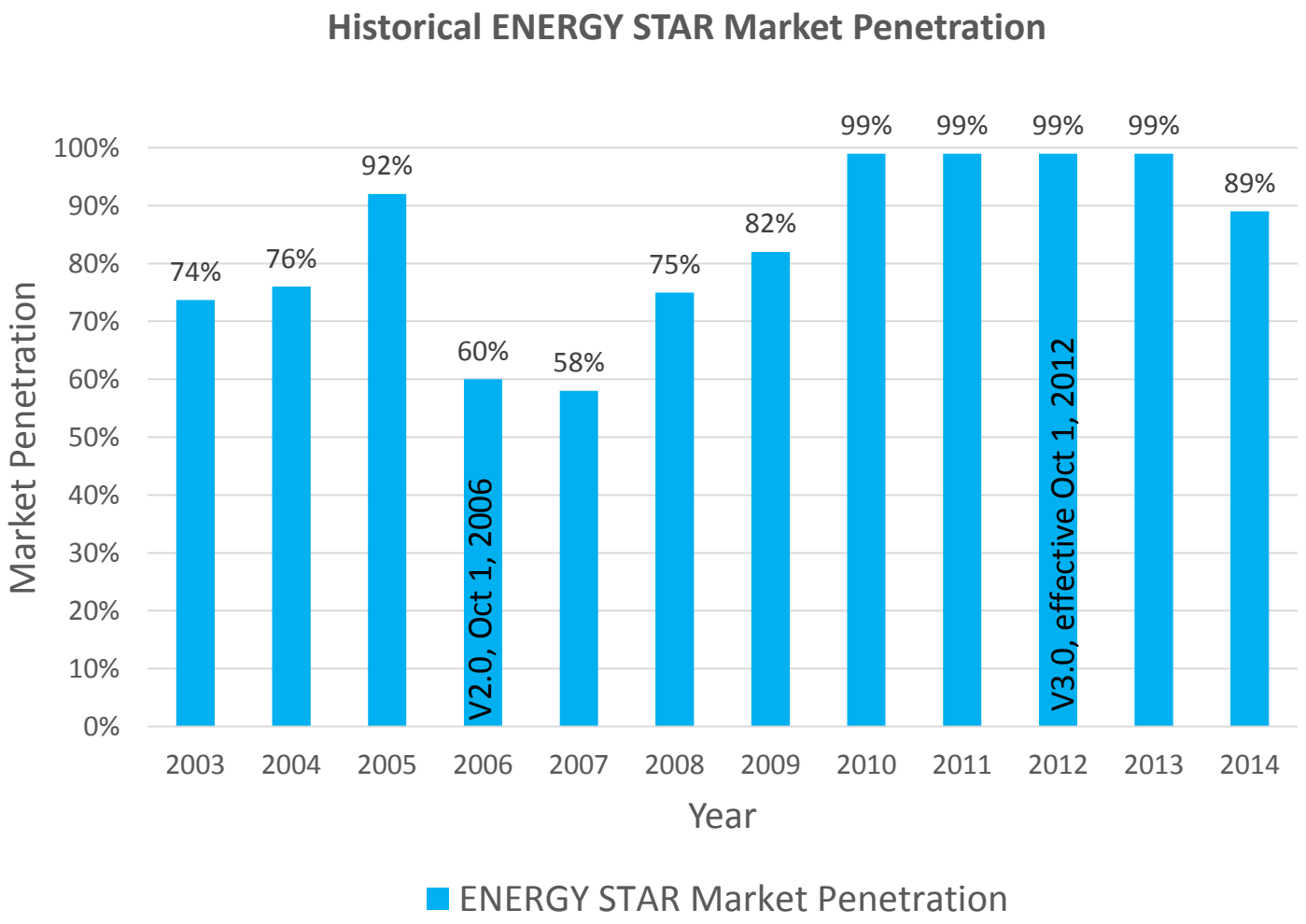
Guiding Principles for Specification Development

- Significant energy savings can be realized on a national basis
  - ENERGY STAR specifications are created only when the energy savings potential translates into tangible energy savings
- Product performance can be maintained or enhanced with increased energy efficiency
  - Label is not only a credible symbol for energy efficiency, but it is also found on products with the features and performance that consumers demand
- Labeling would effectively differentiate products and be visible for purchasers
  - ENERGY STAR's goal is to provide value to purchasers by enabling them to easily identify energy-efficient products that have earned the label

Guiding Principles, *cont.*

- Purchasers recover their investment in increased energy efficiency within a reasonable period of time
  - Every product has *two* price tags:
    - 1) initial product installed cost, and
    - 2) cost of energy to operate over product's lifetime
- Energy efficiency can be achieved through several technologies
  - Specifications take a technology-neutral approach
  - EPA does not designate a proprietary technology or unique design approach when establishing or revising an ENERGY STAR product specification
- Product energy consumption and performance can be measured and verified with testing
  - Available, industry accepted test procedure

Drivers – High ENERGY STAR Market Penetration



Drivers – Federal Test Method & Standards Changes

- New federal test method, Appendix X1
  - Reflective of field conditions
  - Ambient conditions reflect cool room (basement) and lower Relative Humidity (RH)
  - New metric, Integrated Energy Factor (IEF), also captures standby and off-mode energy, thus capturing situations where the fan is running and the compressor is not
- Ongoing new federal standards rulemaking
  - Based on the new metric, IEF and new test method, Appendix X1
  - New test method will affect measured/rated capacity, which results in products being binned differently
  - Rulemaking estimated to be complete in 2016 and effective in 3 years (2019)

Opportunity for Revision – Version 4.0

- Provides an opportunity for EPA to revise the specification before the new federal minimum standards go into effect
  - Addresses high ENERGY STAR market penetration
  - Offers additional savings and product differentiation
  - Will be in effect for 2 to 3 years before the next revision, Version 5.0, goes into effect

- The proposed revision Version 4.0, will be based on current test method, Appendix X and metric, Energy Factor (EF)

Opportunity for next Revision – Version 5.0

- EPA plans to launch a subsequent revision, Version 5.0, after the new federal minimum standards are final
  - Based on the new test method, Appendix X1, and
  - The criteria based on the new metric, IEF, and new capacity bins
- Timeline
  - Launch the revision in 2017/2018
  - Align effective date with the new federal standards effective date (2019)

Q 1: By when do manufacturers plan to test their products to the new test method and metric? Manufacturers are encouraged to share the IEF test data with EPA to inform level setting under Version 5.0

Draft 1, Version 4: Performance Criteria

Product Capacity (Pints/Day)	Current Energy Factor, L/kWh	Proposed Energy Factor, L/kWh
< 75	≥ 1.85	≥ 2.00
75 ≤ 185	≥ 2.80	≥ 2.80

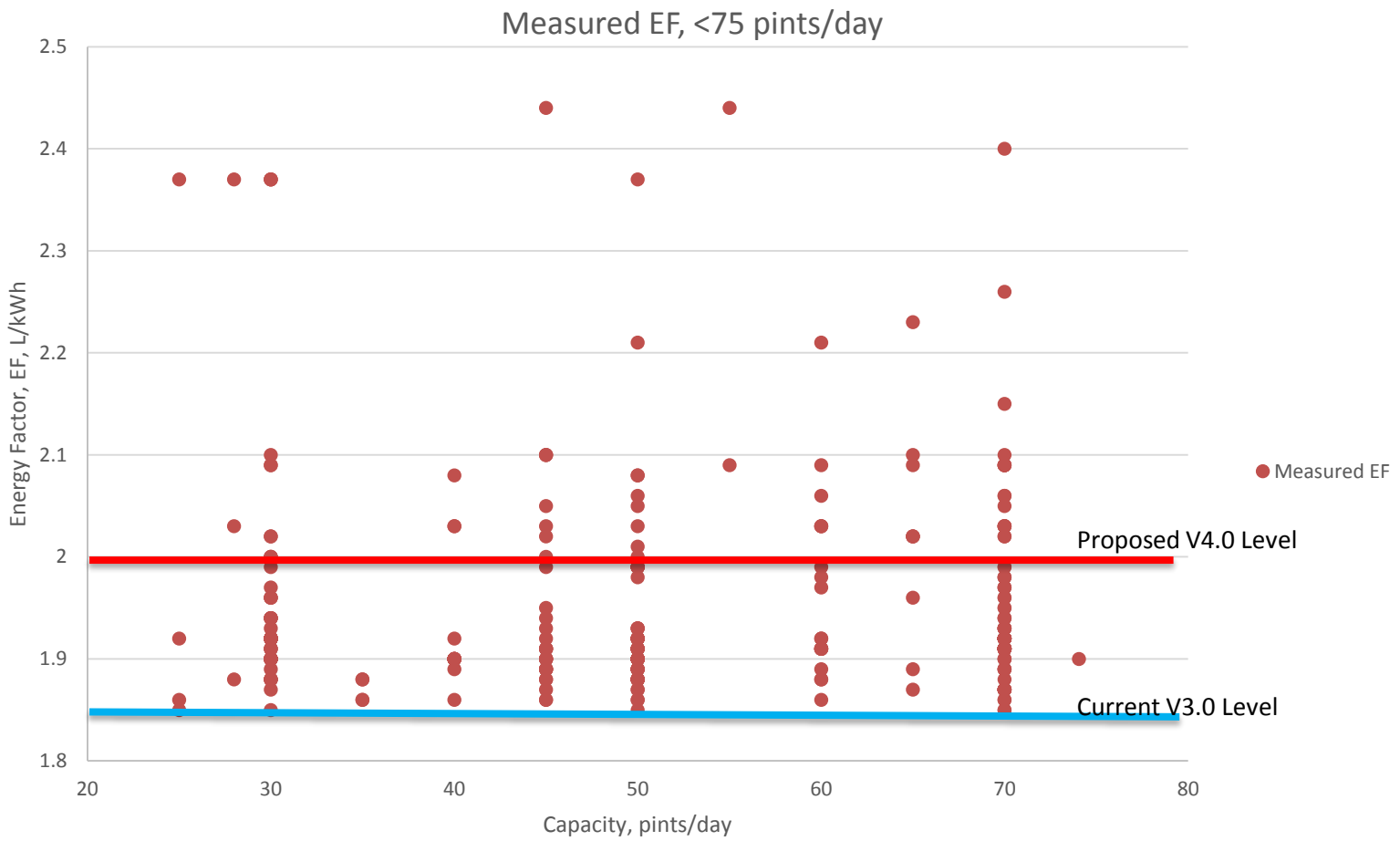
Performance criteria analysis was based on products listed in the ENERGY STAR Qualified Product List (QPL) and DOE Compliance Certification Database (CCD)

Q 2: Are there any other efficiency programs for Dehumidifiers that EPA should be aware of and attempt to harmonize with?

Draft 1: Performance Criteria

- For <75 pints/day category, propose to raise performance level to 2.00 EF from 1.85 EF
- This category represents 99% of the overall market
- Plenty of product differentiation at higher efficiency levels
- Proposed level offers:
  - product differentiation
  - 22% product availability across all size capacities (25 to 70 pints/day)
  - wide range of consumer choice (22 manufacturers)
  - good payback to the consumer

Product Availability for <75 pints/day

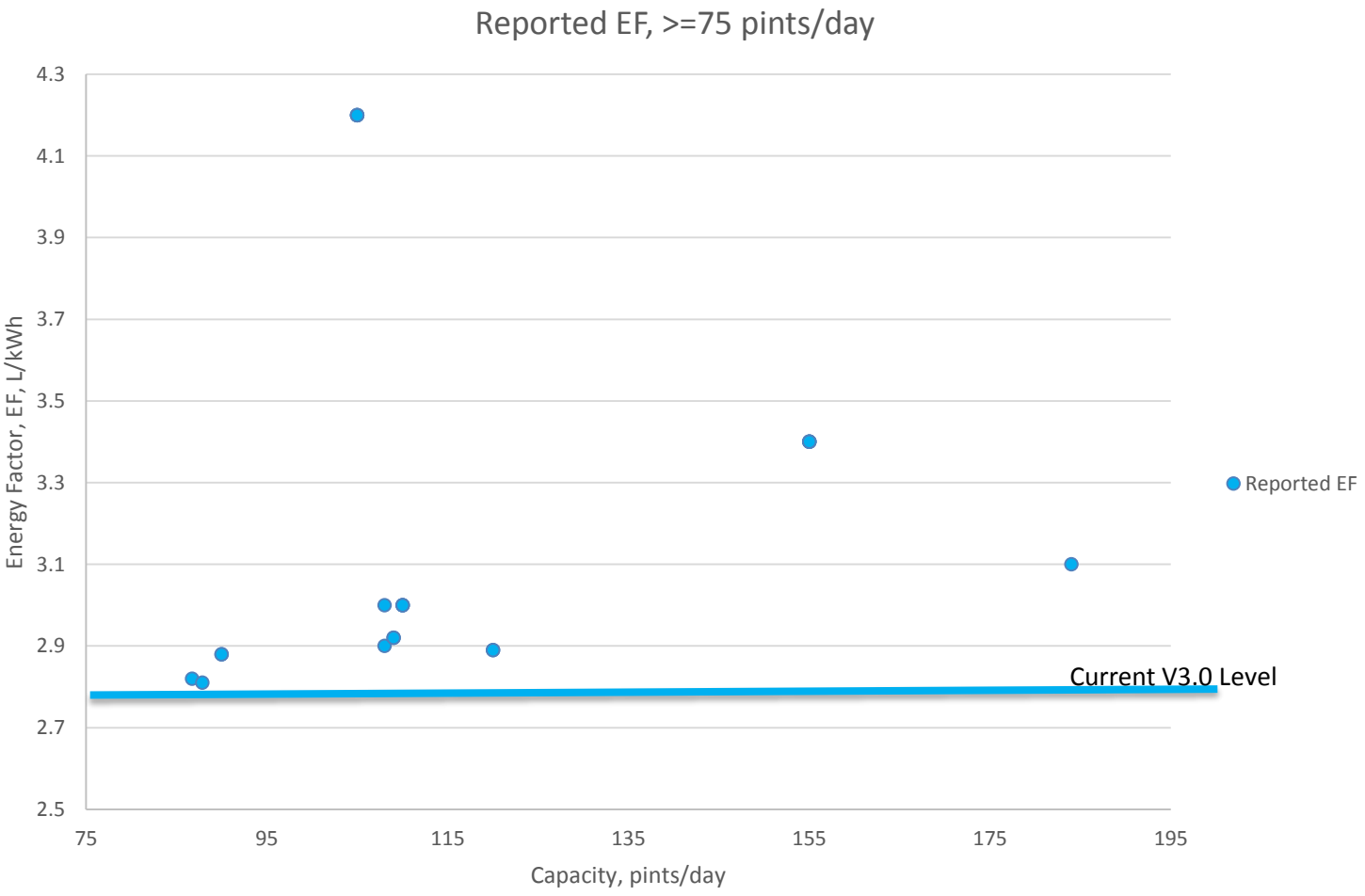


Analysis based on the measured EF

Draft 1: Performance Criteria

- For 75 to ≤ 185 pints/day category, propose to retain the current criteria, 2.80 EF
- This category represents only 1% of the overall market
- Limited consumer choice and product differentiation at higher efficiency levels
- Some products in direct competition with some products in <75 pints/day category

Product Availability for 75 to ≤ 185 pints/day



Analysis based on reported EF, as reported and measured EFs are similar in this category

Scope, Definitions, Test Methods

- Maintain current scope
- No changes to definitions
- Current test method (Appendix X) and metric (Energy Factor)

Specification Development Timeline

- Nov. 17, 2015 - Draft 1 released
- Dec. 3, 2015 - Stakeholder Webinar
- Dec. 17, 2015 - Draft 1 comment period closes
- Jan. 2016 - Final Draft published
- Feb. 2016 - Final published
- Nov. 2016 - Effective

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