



ENERGY STAR Commercial Refrigerators & Freezers

Draft 1 Version 4.0 Stakeholder Webinar

April 21, 2016





Agenda

- Welcome and Introductions
- Overview of the Specification Development Process
- Activities to Date
- Draft 1 Proposal
 - Comments
- General Discussion & Questions
- Timeline & Next Steps

Introductions

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Guiding Principles that may impact timing of Specification Revisions

- Significant increase in ENERGY STAR market penetration
- Change in Federal minimum efficiency standards
- Technological advancements
- Concern about consumers not realizing expected energy savings
- Product performance or quality concerns
- New or improved test procedure



Specification Development

- When developing or revising a specification, EPA balances:
 - The need to keep pace with evolution among leading products and continue to effectively differentiate the most efficient products
 - Timing & impact of new Federal standards
- Key elements of the stakeholder process:
 - Consistency
 - Transparency
 - Inclusiveness
 - Responsiveness
 - Clarity



Federal Minimum Efficiency Standard

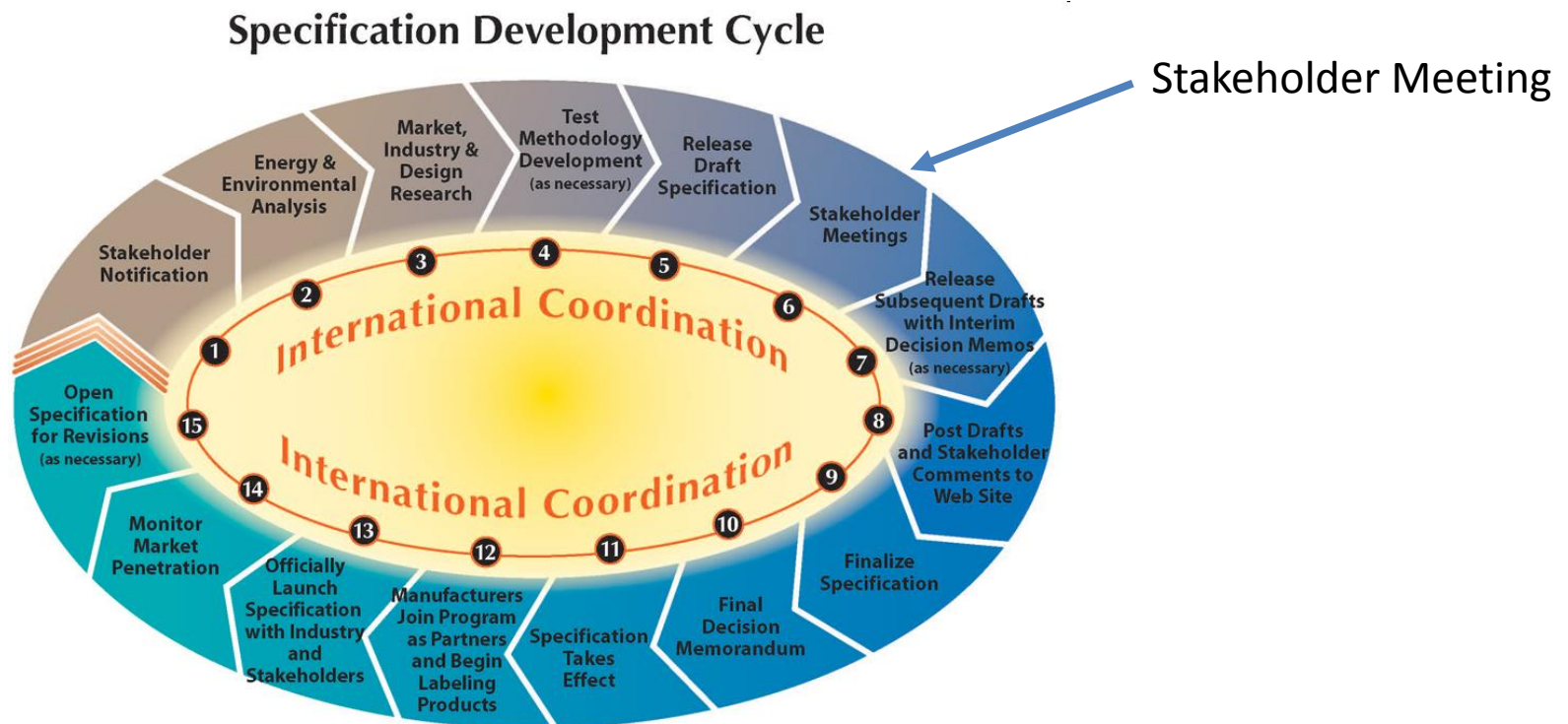
- Effective March 27, 2017
- Impacts ENERGY STAR commercial refrigeration equipment **in all** categories
- Meets or exceeds several Version 3.0 ENERGY STAR levels for products

EPA's Objectives for Version 4.0

- Reduce the maximum daily energy consumption (MDEC) criteria levels
- Align terms and definitions with DOE's Final Rule

Activities to Date

- Draft 1 Release: March 24, 2016
- Draft 1 Stakeholder Webinar: April 21, 2016





Terms & Definitions (Aligning with DOE)

- Commercial Hybrid: amended
- Solid Door Cabinet; Solid Door; Transparent Door Cabinet; and Transparent Door: removed and replaced
- Self-Contained Condensing Unit: added
- Drawer Cabinet: removed
- Chef Base/Griddle Stand: added
- Semi-Vertical Open: added
- Service Over Counter: added
- Basic Model: amended

Table 1: ENERGY STAR Requirements for Commercial Refrigerators, Freezers, and Refrigerator-Freezer

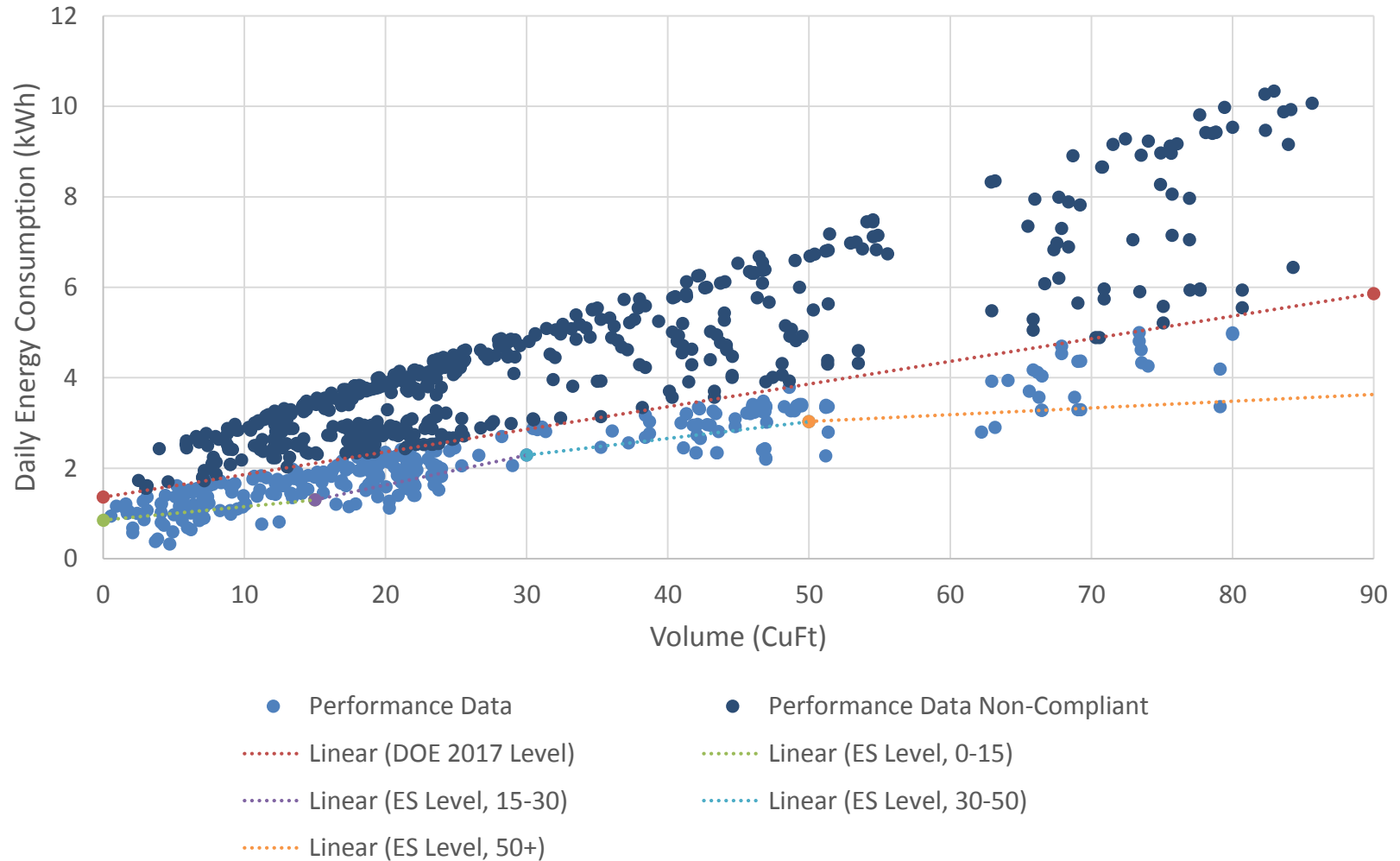
Product Volume (in cubic feet)	Refrigerator	Freezer
Vertical Closed		
Solid	VCS.SC.M	VCS.SC.L
$0 < V < 15$	$0.03V + 0.85$	$0.13V + 0.85$
$15 \leq V < 30$	$0.066V + 0.31$	$0.22V - 0.5$
$30 \leq V < 50$	$0.037V + 1.18$	$0.25V - 1.402$
$50 \leq V$	$0.015V + 2.28$	$0.1V + 6.096$
Transparent	VCT.SC.M	VCT.SC.L
$0 < V < 15$	$0.10V + 0.37$	$0.24V + 0.7$
$15 \leq V < 30$	$0.05V + 1.12$	$0.22V + 1.0$
$30 \leq V < 50$	$0.07V + 0.52$	$0.21V + 1.298$
$50 \leq V$	$0.105 V - 1.231$	$0.2V + 1.796$
Horizontal Closed		
Solid or Transparent	HCT.SC.M, HCS.SC.M	HCT.SC.L, HCS.SC.L
All Volumes	$0.05V + 0.28$	$0.057V + 0.55$



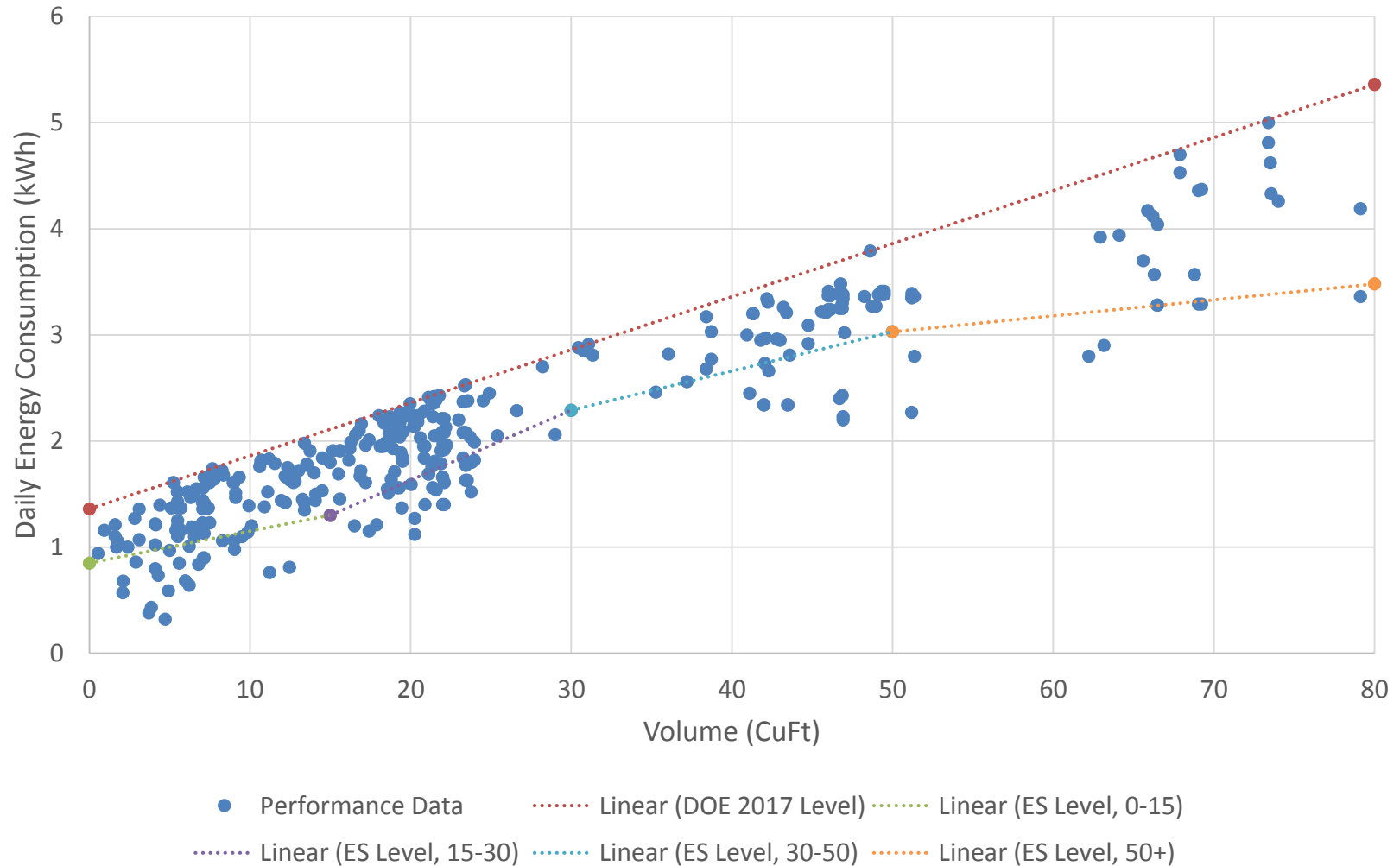
Determining Proposed Levels

- Products manufactured on or after March 27, 2017, (e.g., do not meet DOE 2017 levels) removed from this analysis
- Removed duplicative models
- Energy savings compares proposed ENERGY STAR V4.0 level to DOE 2017 level, not the current DOE levels
- Received stakeholder support to evaluate individual sizes (within product categories) independently versus taking a “% better” approach
 - EPA proceeded with the binned approach for vertical models to ensure product availability of various product sizes
 - EPA decided a “% better” approach was more practical for horizontal models due to limited data sets

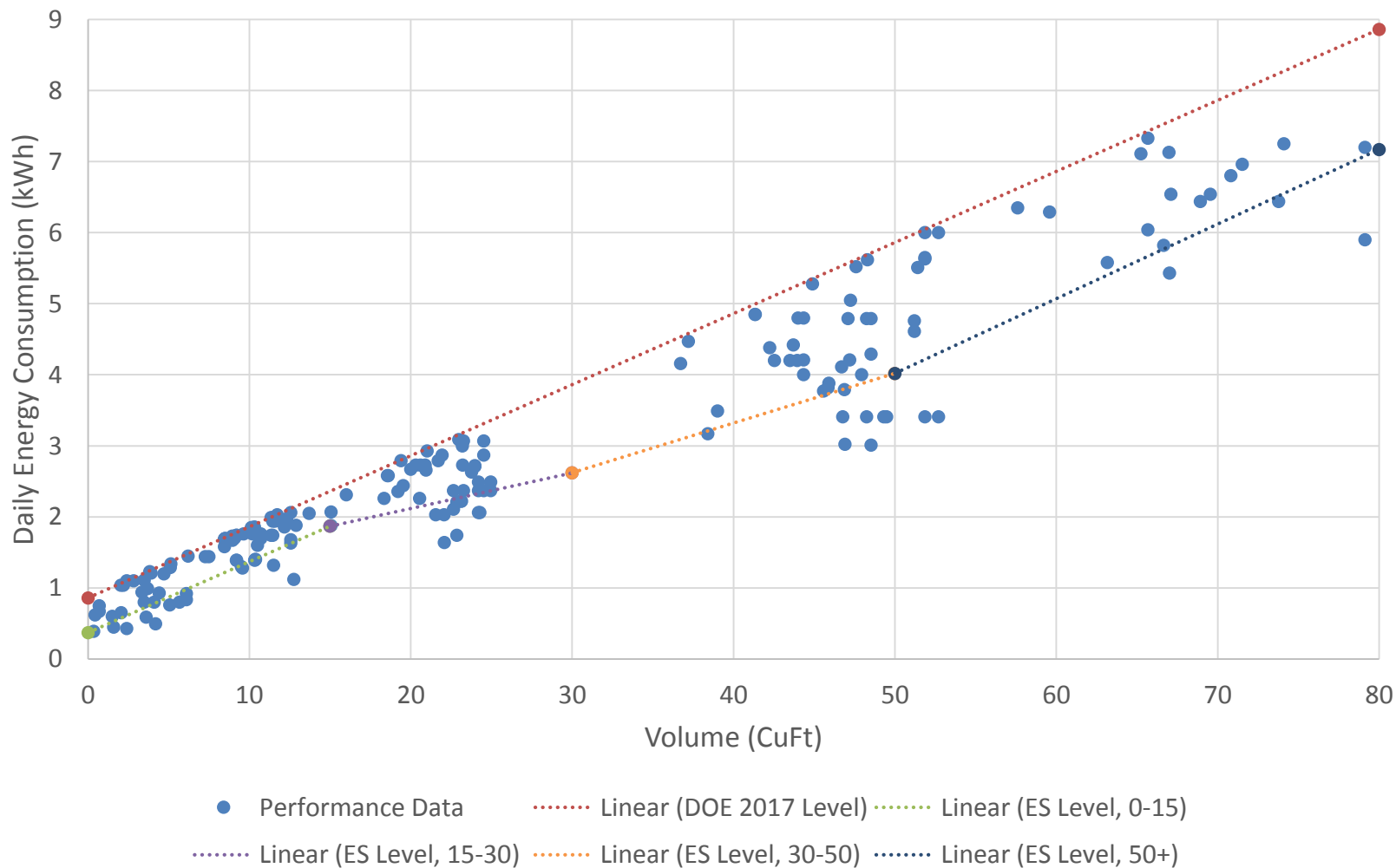
VCS.SC.M, Levels



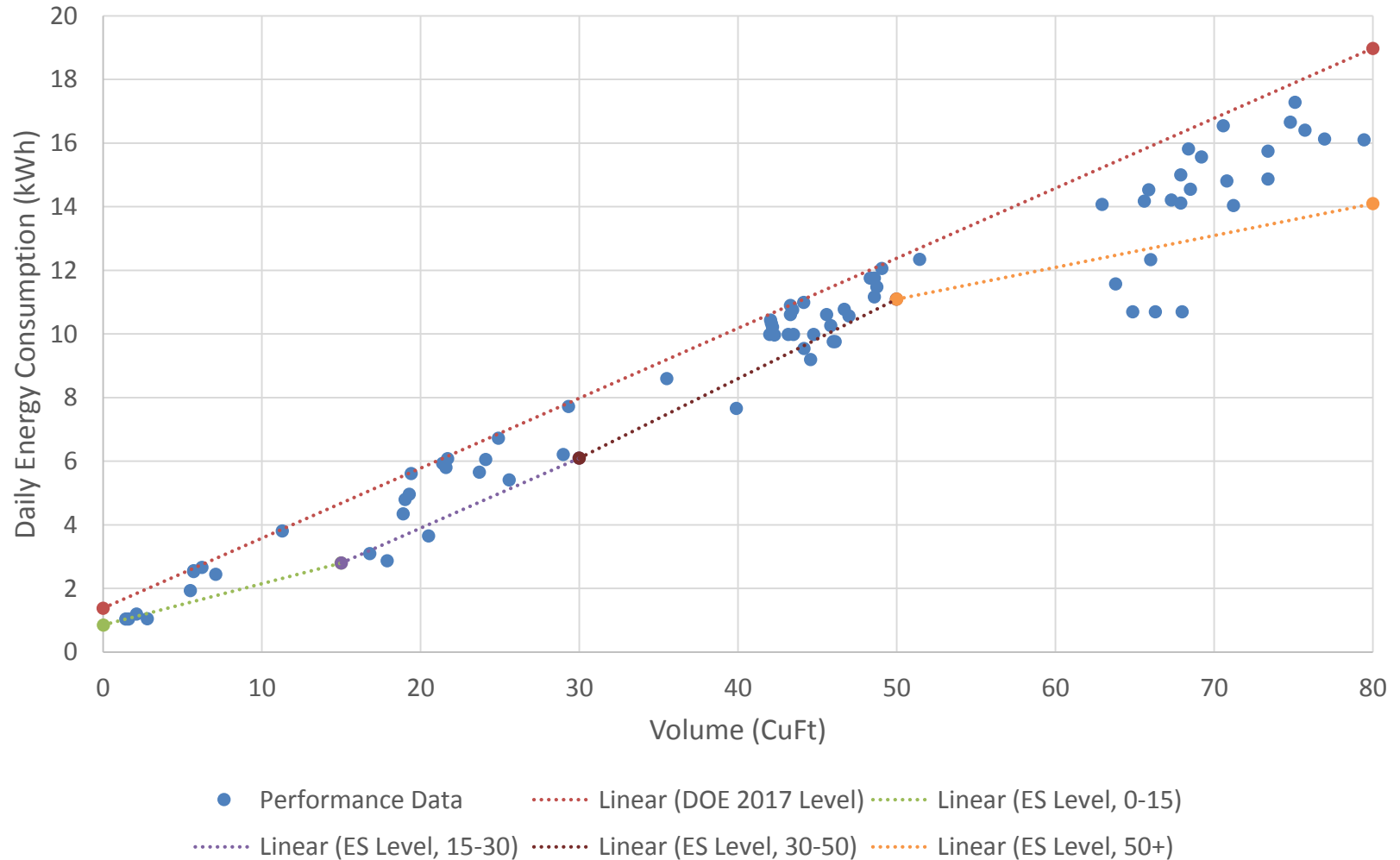
VCS.SC.M, Levels



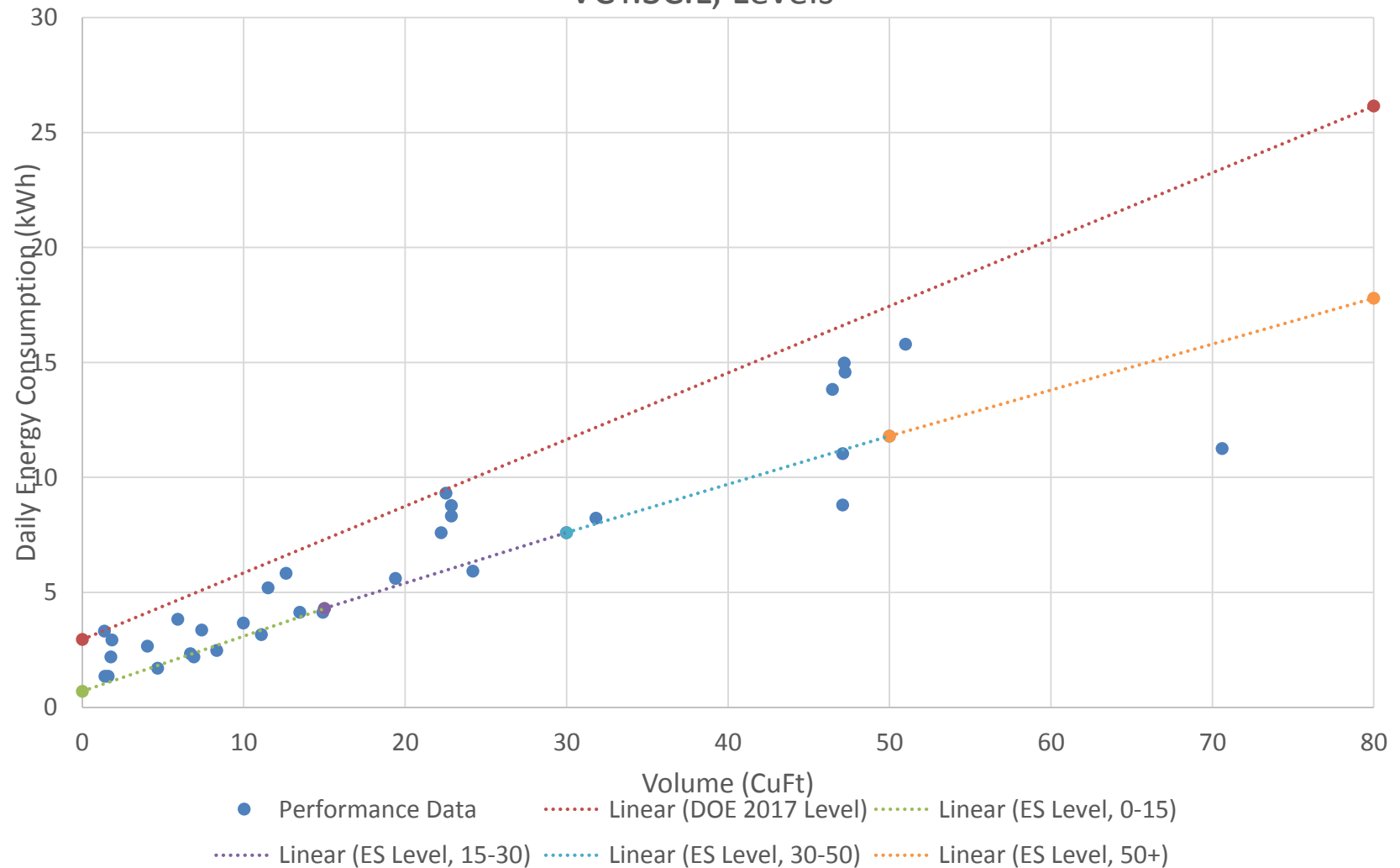
VCT.SC.M, Levels



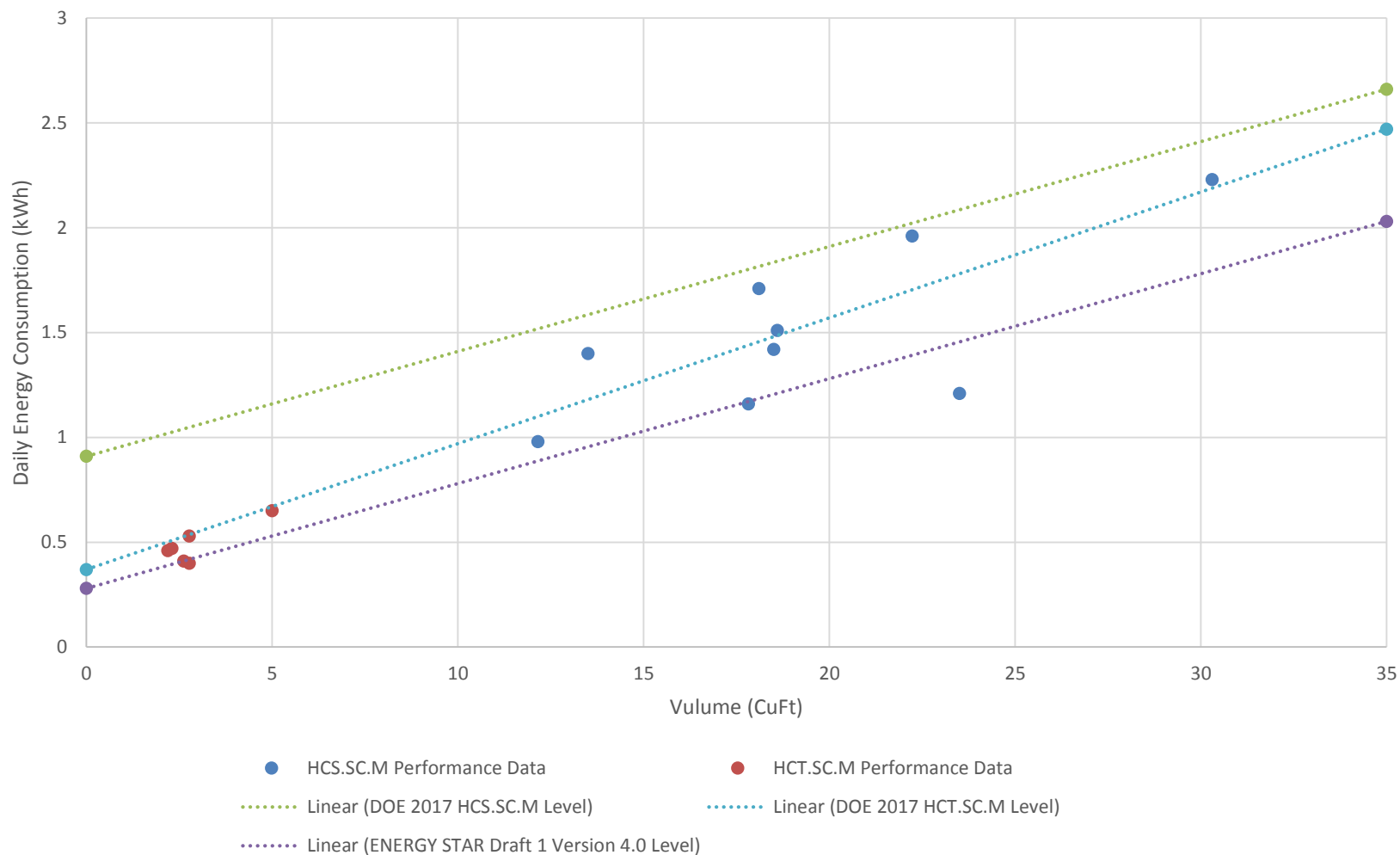
VCS.SC.L, Levels



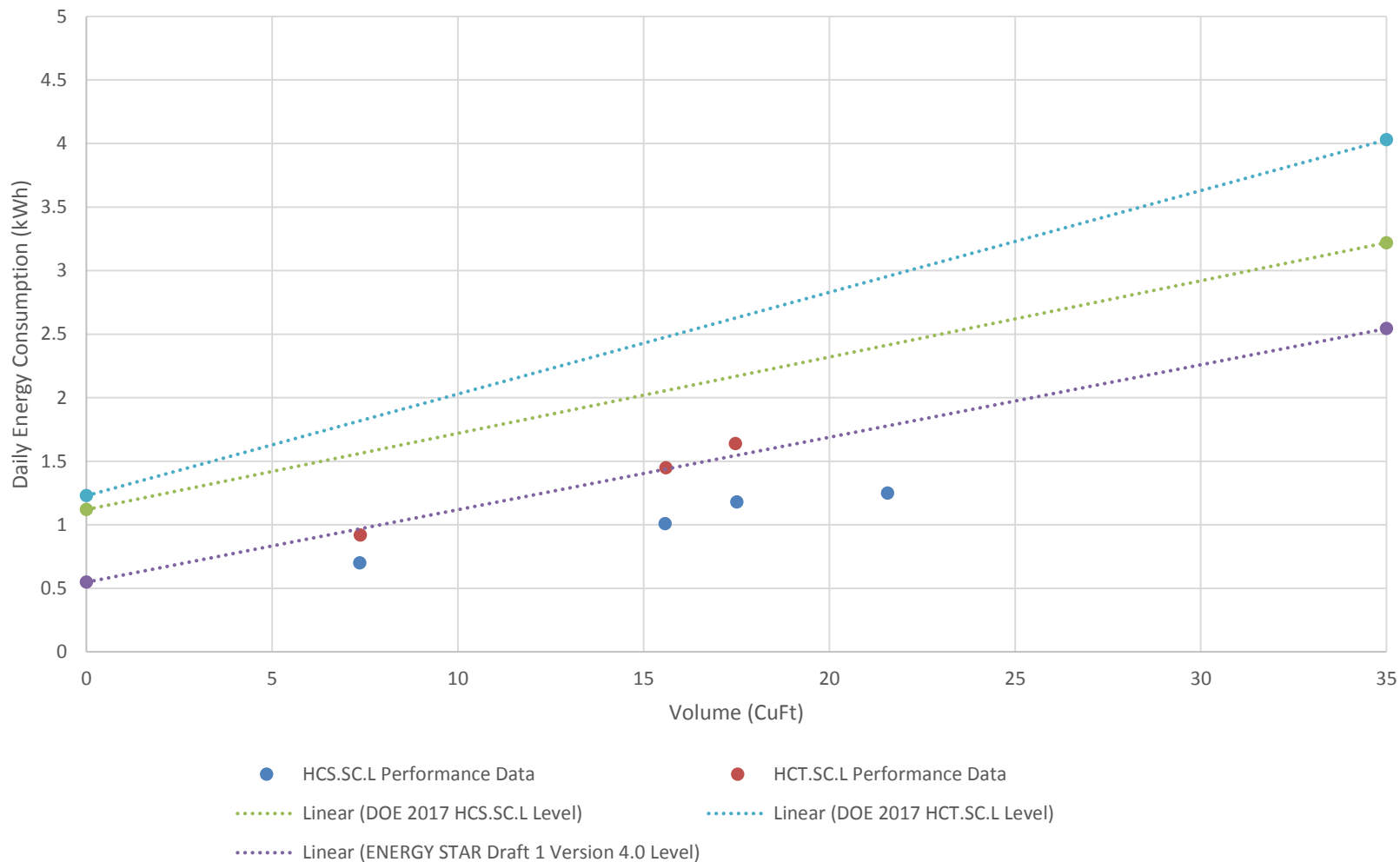
VCT.SC.L, Levels



HCS/T.SC.M, Level



HCS/T.SC.L, Level





Progress in Underway

- In anticipation of DOE 2017 and SNAP Rules, manufacturers are taking the initiative to make changes to existing products
- Draft 1 Version 4.0 levels continue to allow recognition of energy efficient products
- Average unit energy savings range depending on product class:
 - VCS.SC.M: 20-38%
 - VCT.SC.M: 19-57%
 - VCS.SC.L: 10-40%
 - VCT.SC.L: 32-76%
 - HCS.SC.M/HCT.SC.M: 24-69%
 - HCS.SC.L/HCT.SC.L: 21-51%
- There was some a suggestion from some stakeholders to suspend the CRE specification



Component Change and Re-design

- LED lighting
- Insulation
- Efficient compressors
- Light sensors
- Efficient fan motors



General Discussion & Questions?



Specification Development Timeline: Target Dates

- Draft 1 Comments Due: April 21, 2016
- Draft 2: May 4, 2016
- Draft 2 Comments Due: June 2, 2016
- Final Draft: June 13, 2016
- Final Draft Comments Due: June 27, 2016
- Final: July 8, 2016
- Effective: **March 27, 2017**

Thank you!

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