ENERGY STAR® Version 5.0 Furnaces Draft 1 Specification

Stakeholder Webinar

May 1, 2024

United States Environmental Protection Agency

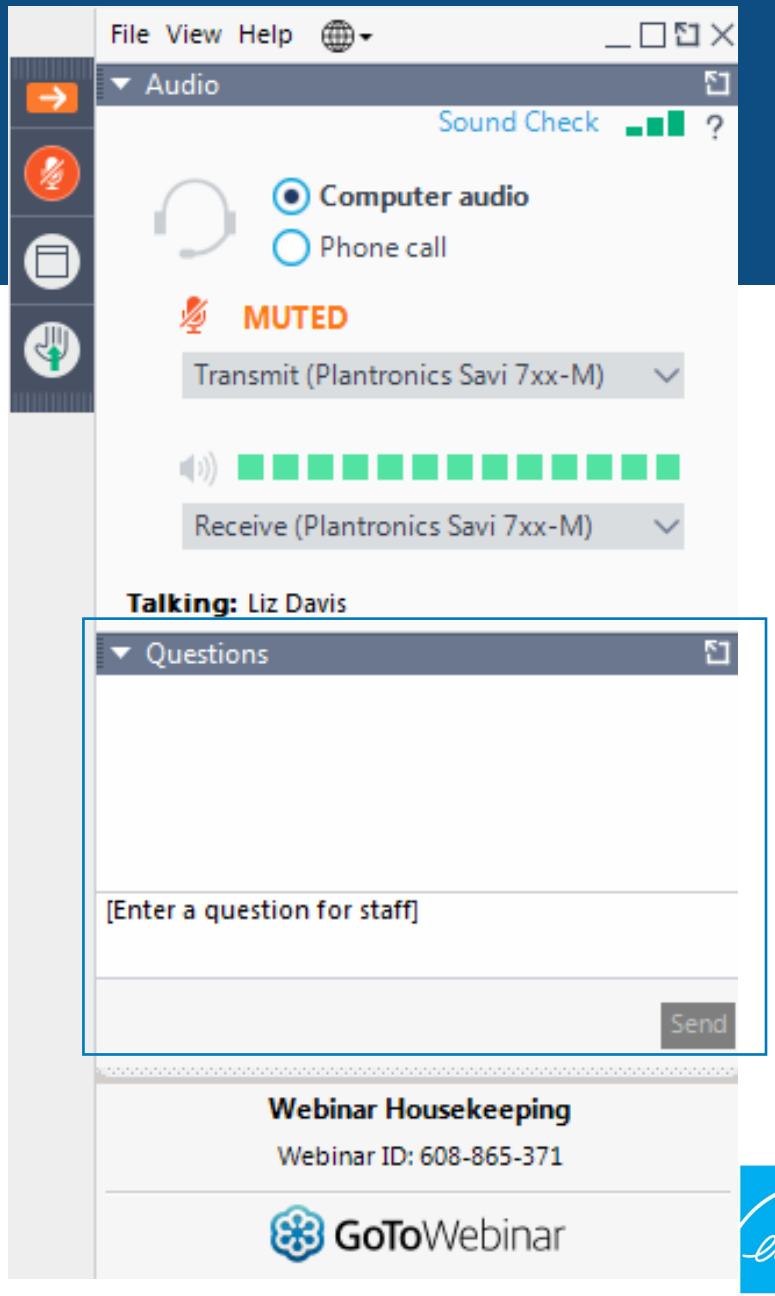
Meeting Details

- Slides and related materials will be available on the Furnaces Product Development Web page:
  - Furnaces Version 5.0

- Audio provided via teleconference:

U.S. Phone Number: +1 (415) 930-5229

- Phone lines will be muted at the start of the presentation
- Please leave your line on mute unless speaking during the call for questions
- Press *6 to unmute your line and when you are finished with your question or comment, *6 to mute



Meeting Agenda

1. **Introductions**
2. Timeline
3. Background
4. Certification Criteria
5. Product Availability
6. Savings & Payback
7. Dual Fuel Systems
8. Closing – Next Steps & Questions

Introductions

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Please email HVAC@energystar.gov for all ENERGY STAR HVAC-related questions and inquiries.

What is ENERGY STAR?

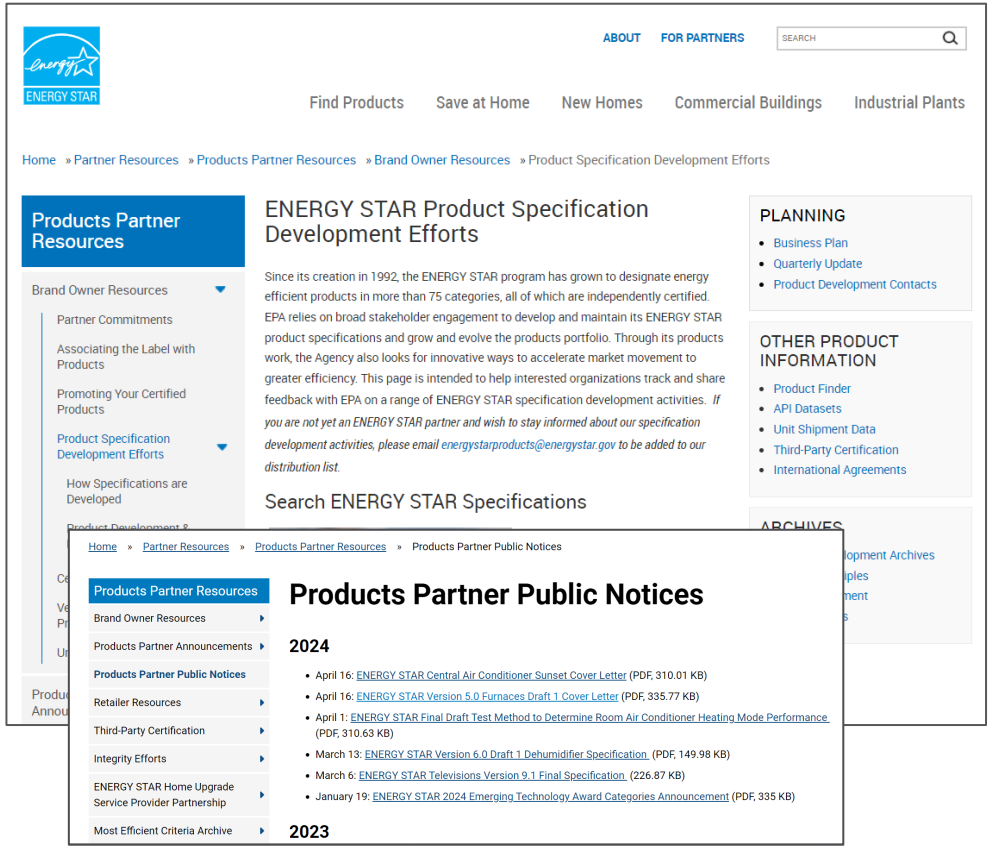
The simple choice for energy efficiency.

- Influential and trusted symbol of **energy efficiency**
- Available across **75+ product categories**
- Since 1992, a voluntary **partnership** among government, business, and consumers
- Products are independently certified to meet strict energy-efficiency guidelines set by the **U.S. EPA**
- **Utilities** offer **rebates** on ENERGY STAR certified equipment
- **Saves** end-users **energy**, **water**, and **money**
- Helps protect the **climate**

Specification Development

- ENERGY STAR follows EPA's Standard Operating Procedure through the specification development or revisions process, balancing:
  - The need to keep pace with evolution among leading products and continue to effectively differentiate for consumers
  - Production cycles, other factors important to the industry

- Key elements of the stakeholder process:
  - Consistency, transparency, inclusiveness, responsiveness, and clarity
  - Stakeholder engagement is a vital aspect to the success of the ENERGY STAR program



ENERGY STAR Product Specification Development Efforts

Products Partner Public Notices

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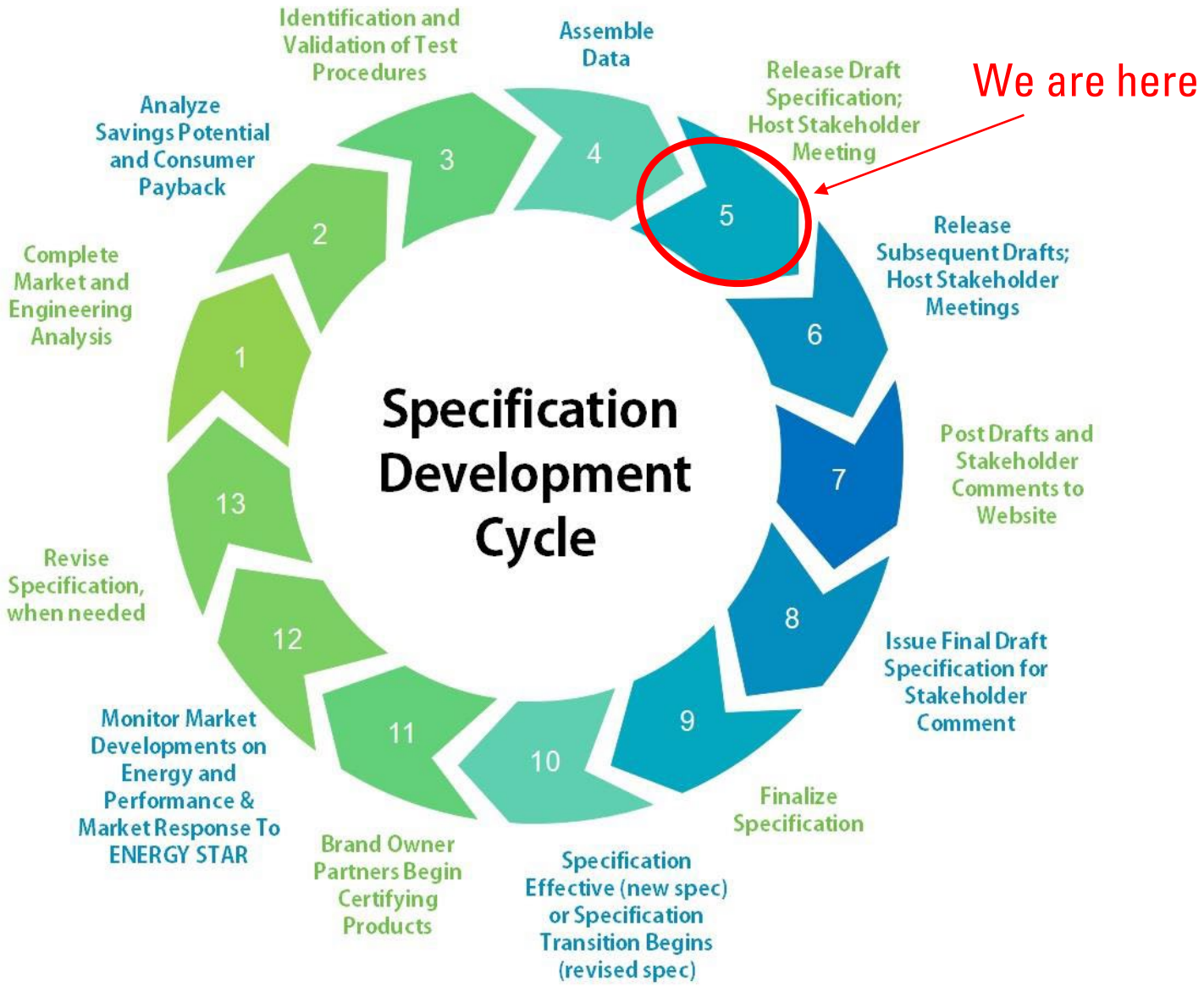
Specification Development Cycle
1
Complete Market and Engineering Analysis
2
Analyze Savings Potential and Consumer Payback
3
Identification and Validation of Test Procedures
4
Assemble Data
5
Release Draft Specification; Host Stakeholder Meeting
We are here
6
Release Subsequent Drafts; Host Stakeholder Meetings
7
Post Drafts and Stakeholder Comments to Website
8
Issue Final Draft Specification for Stakeholder Comment
9
Finalize Specification
10
Specification Effective (new spec) or Specification Transition Begins (revised spec)
11
Brand Owner Partners Begin Certifying Products
12
Monitor Market Developments on Energy and Performance & Market Response To ENERGY STAR
13
Revise Specification, when needed

Current Timeline: Furnaces V5

- Draft 1 published – April 16, 2024
- Draft 1 webinar – May 1, 2024
- Draft 1 comments due – May 16, 2024

POTENTIAL TIMELINE

Finalize – Q3 2024

Targeting an effective date in 2026

* This timeline is subject to change

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Background

- On May 18, 2023,the EPA distributed a proposal to sunset the ENERGY STAR specification for furnaces
  - In response to compelling support for continuing the label, the EPA has decided to propose an update to the furnace specification, rather than a sunset
- Revision drivers:
  - The ENERGY STAR specification for furnaces was last updated in 2013
  - There is an ENERGY STAR gas furnace market share of about 40% and oil furnace market share of 90%, presenting an opportunity for further differentiation
  - Align the ENERGY STAR specification with eligibility requirements for Section 25C tax credits established under the Inflation Reduction Act
  - Opportunity for further differentiation as the market advances to meet the new minimum federal requirements effective in December 2028

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Certification Criteria for Gas Furnaces

- Elimination of the regional distinction
  - Aligns with current minimum efficiency standards
  - Simplifies program administration and participation
  - Sales data indicates that consumers are generally not taking advantage of the U.S. South performance level
- Increased AFUE minimum for gas furnaces from 90%/95% to 97% AFUE
  - Aligns with eligibility requirements for federal tax credits
  - Plenty of models are available from several manufacturers
  - Acceptable savings and payback period
- General: Minor language & document organization updates
  - Reflects recent ENERGY STAR practices

Certification Criteria for Oil Furnaces

- Increased AFUE minimum for oil furnaces from 85% to 87% AFUE
  - More stringent than the eligibility requirements for federal tax credits
  - Plenty of models are available from several manufacturers
  - Acceptable savings and payback period
- Added requirement of UL 726 certification so that oil-fired furnaces are safe burning biofuel mixes
  - Aligns with the oil furnace tax credit in the Inflation Reduction Act
- General: Removal of warranty requirements
  - Simplifies the specification
  - Market typically provides sufficient warranties for this product

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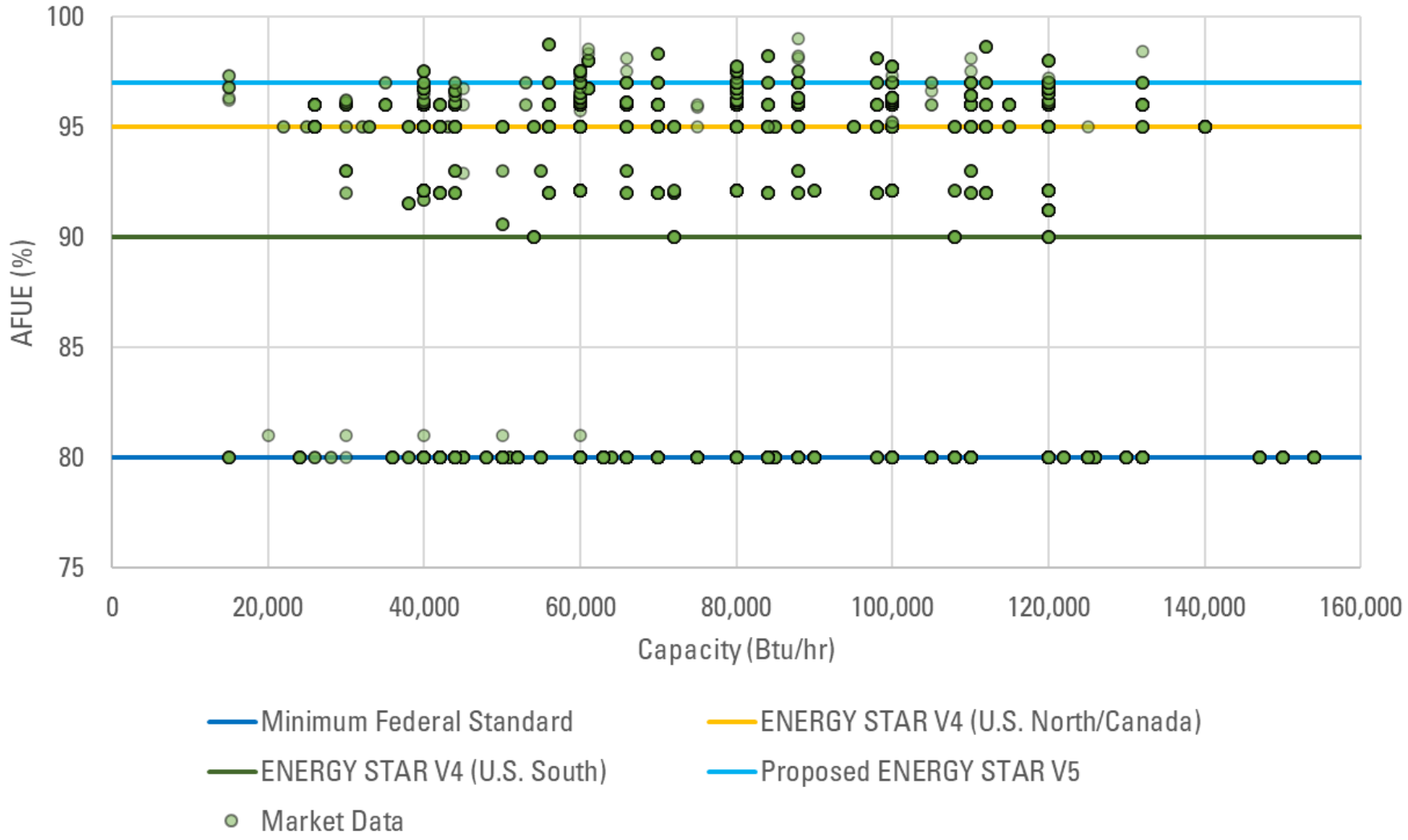
Product Availability

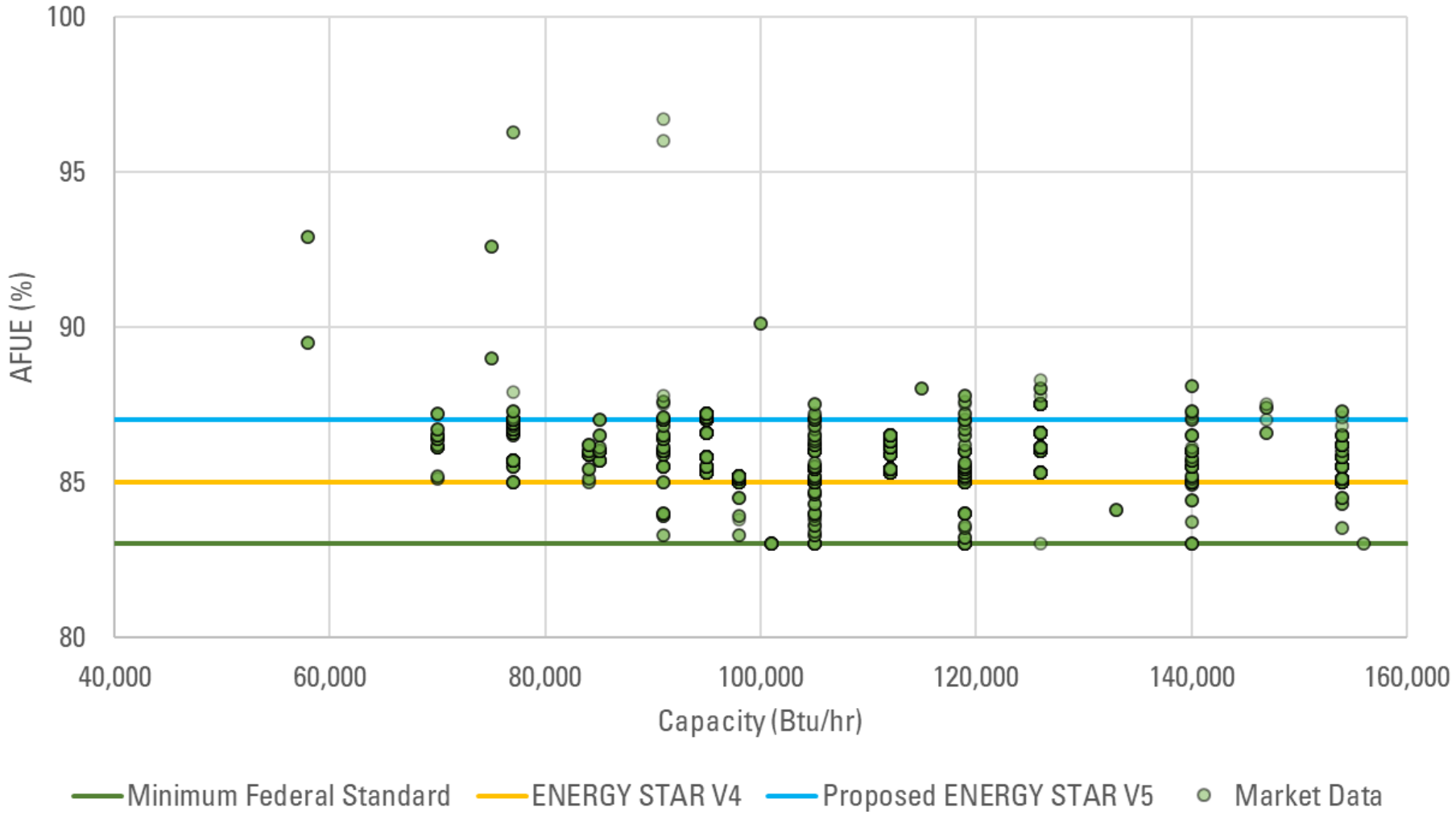
ESTAR Type	Total Current DOE Models	Meet Version 5.0	% Version 5.0 of Total Models
Gas Furnace	10,065	455	4.5%
Oil Furnace	2,152	279	13.0%
Total	12,217	734	6.0%

EPA notes that the proposed level for gas furnaces is the same as the Inflation Reduction Act tax credit level, so the number of models is expected to increase rapidly.

Gas Furnace Market



Oil Furnace Market



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Savings & Payback for Gas Furnaces

	Fuel Savings (Therms)	Monetary Fuel Savings	Emissions Reduction (pounds of CO2)
Annual Unit	92	$131	1,076
Lifetime Unit	1,969	$2,813	23,031
National Annual	1,905 Million Therms	$2,723 Million	10.1 MMTCO2

Proposed V5 AFUE	Installed Cost	Annual Operating Cost	Annual Savings (MMBtu)	Simple Payback (years)
97%	$3,879	$439	9.2	10.5

Source: EERE-2014-BT-STD-0031-0320 Tables 7.4.1 & 8.7.1

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Savings & Payback for Oil Furnaces

	Fuel Savings (Therms)	Monetary Fuel Savings	Emissions Reduction (pounds of CO2)
Annual Unit	32	$113	531
Lifetime Unit	710	$2,503	11,778
National Annual	21 Million Therms	$73 Million	0.2 MMTCO2

Proposed V5 AFUE	Installed Cost	Annual Operating Cost	Annual Savings (MMBtu)	Simple Payback (years)
87%	$4,323	$1,387	3.2	1.5

Source: EERE-2021-BT-STD-0031-0011 Tables 7.4.1 & 8.5.1

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Dual Fuel Systems

- EPA & DOE are working with stakeholders to develop recognition
- EPA is interested in understanding the efficiency implications of installing a heat pump with an existing furnace and making such installations when sensible eligible for the ENERGY STAR label

EPA welcomes continued engagement from all stakeholders as we continue to assess these issues

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Webinar Wrap-up and Comment Deadline

- EPA appreciates the opportunity to discuss the Draft 1 with stakeholders today
- Comments are due on **May 16, 2024**
- Please send all comments to:

HVAC@energystar.gov

Unless commenters indicate that written feedback is confidential, all comments will be posted to the Furnaces product development page.

Timeline

Event	Date
Draft 1 Version 5.0 Specification	April 16, 2025
Draft 1 Version 5.0 Webinar	**May 1, 2024**
Draft 1 Comments Due	May 16, 2024
Publish Final Version 5.0 Specification (V4 products will remain on the QPL until V5 goes into effect; targeting an effective date in 2026)	*Q3 2024*