



# ENERGY STAR® Residential Water Heaters Version 3 Updates

## Certification Body Webinar and Discussion

Abigail Daken, U.S. EPA  
Eamon Monahan, U.S. EPA  
Kathleen Vokes, U.S. EPA

May 23, 2017



## Webinar Audio Access

### **TO USE YOUR COMPUTER'S AUDIO:**

You will be connected via your computer's microphone and speakers (VoIP). A headset is recommended.

-- OR --

### **TO USE YOUR TELEPHONE:**

Select "Use Telephone" after joining the webinar and call in using the numbers below.

United States: +1 (631) 992-3211

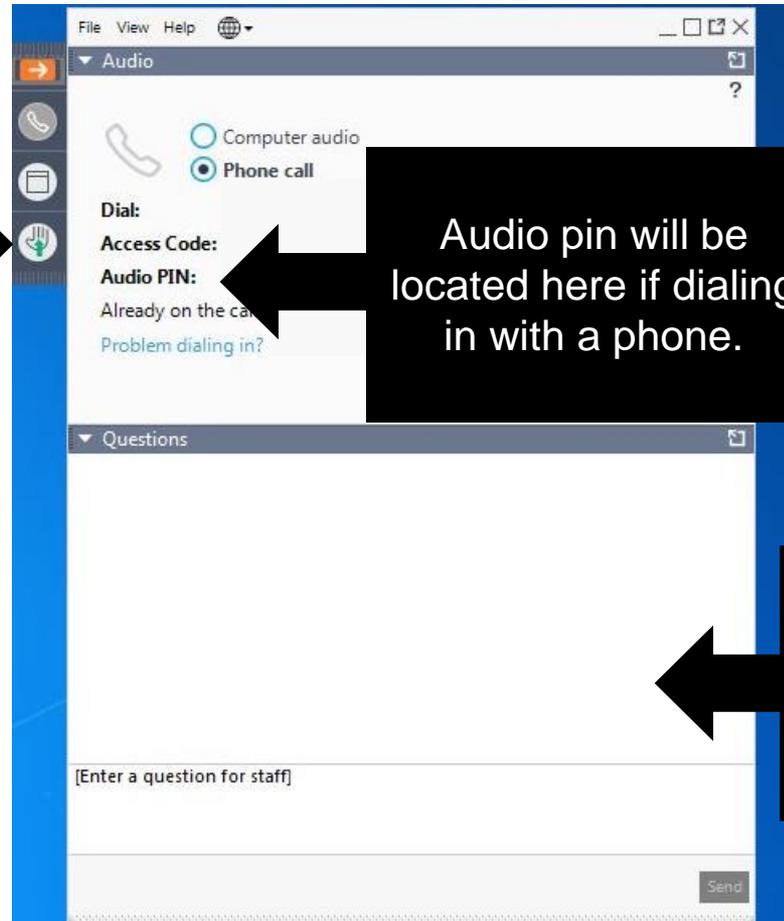
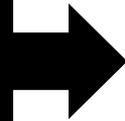
Access Code: 592-662-936

Audio PIN: Shown in webinar control panel after joining

To mute/unmute phone: press \*6

# Webinar Participation

Click here to raise your hand during the webinar. Doing so indicates that you want to be unmuted and speak to the audience.



Audio pin will be located here if dialing in with a phone.

Type any questions or comments here during the webinar.



# Agenda

- 1** **Version 3.1 Specification Overview**
- 2** **Updated Version 3 QPX**
- 3** **Next Steps**
- 4** **Discussion**



- 1** **Version 3.1 Specification Overview**
- 2 Updated Version 3 QPX
- 3 Next Steps
- 4 Discussion



## Introduction

- EPA has amended the specification to allow non-solar water heaters to be certified using the new DOE metric, UEF.
- One subtlety: several performance metrics have the same names but different meanings in the two DOE test methods (EF and UEF test methods)
- As per DOE, UEF and associated metrics can come from:
  - Converted EF data (until 12/29/2017)
  - Tested UEF data

[Water Heater Product Development Webpage](#)



# Introduction

- Products certified to Version 3.0 remain certified
- Version 3.1 UEF levels
  - UEF levels represent the same stringency as EF (or TE and standby loss) levels
  - No changes to the criteria for solar water heaters



## Introduction

- Information in Appendix A pertains only to units certified via UEF.
- Aside from those appearing in Appendix A, all other definitions, criteria, and test requirements in the rest of the specification apply to **all** water heaters.
- For example, if certifying a gas-fired storage water heater to UEF, the significant digits/rounding and sampling plans found elsewhere in the spec apply to this unit. The definition of “first hour rating” in the main spec does not, because there is a definition of “first hour rating” in Appendix A as well.



## Definitions & Scope

- Appendix A includes definitions of new terms, and new definitions of previously existing terms. The definitions in Appendix A pertain to water heaters certifying using UEF
  - All from DOE UEF test method
- Scope of water heaters certifying using UEF is based on definitions found in Appendix A
- Gas-fired storage residential-duty commercial
  - Similar to Light-duty EPACT, but slightly larger scope (75,000 – 105,000 Btu/h)



## Certification Criteria

- Certification using UEF supersedes the rest of the specification
  - If certifying using UEF, need not report EF, Thermal Efficiency, nor Standby Loss
- Work with your clients to report tested or converted UEF data (and associated performance metrics) for units certified using EF to EPA.
  - Reported UEF and associated metrics will be displayed, but...
  - Units certified to EF do not need to meet the UEF criteria, even once they report UEF



## Certification Criteria

- EPA will accept converted UEF data up until **December 29, 2017** in alignment with DOE's timeline
  - From then on, all submitted UEF data should be based on tested values
- EPA expects **all new models** to be certified using UEF
  - This is not required by the specification, but strongly encouraged
  - In addition, we expect manufacturers to follow DOE regulation and use UEF to represent their products' efficiency



## Test Methods

- EF Test Method
  - 10 CFR Parts 200 to 499 edition revised as of January 1, 2014
  - “Historical Water Heaters Test Method” on Water Heater [Partner webpage](#)
- UEF Test Method
  - 10 CFR Part 430, Subpart B, Appendix E
  - 10 CFR Part 431, Subpart G



## Verification Testing

- Whenever they are pulled for testing, units certified to EF requirements should be verified using the EF test method and comparing requirements to those in the main body of the specification. (EF and associated performance metrics)
- Units certified to UEF requirements, whether using converted or measured values, should undergo the UEF test method for verification, and those tested values compared to the requirements in Appendix A of the spec. (UEF and associated performance metrics)



- 1 Version 3.1 Specification Overview
- 2 **Updated Version 3 QPX**
- 3 Next Steps
- 4 Discussion



## Updated Version 3 QPX Review

- Draft Version 3 QPX updates available for review on product development webpage due to significant changes:
  - [Non-Solar QPX](#)
  - [Solar QPX](#)



## Updated Version 3 QPX Review

- New Non-Solar Data
  - Gas-fired Storage Residential-duty Commercial added as Product Type
  - UEF
  - Performance metrics as per the UEF test method:
    - First-Hour Rating at 125°F
    - Recovery Efficiency per UEF test method
    - Therms per Year at 125°F
    - Max and Min GPM at 67°F rise
    - Electric Usage at 125°F
- Clarifications added to descriptions of metrics associated with EF



## Updated Version 3 QPX Review

- New Solar Data
  - Performance metrics of the back up tank as per the UEF test method:
    - Recover Efficiency per UEF test method
    - Therms per Year at 125°F
    - Max and Min GPM at 67°F rise
    - Electric Usage at 125°F
- Clarifications added to metrics associated with EF



## Updated Version 3 QPX Discussion

- EPA expects all new products to include performance information in the new data fields associated with UEF, as applicable.
- UEF will be the default sort for the Product Finder.
- EPA expects that performance information for already certified models will be populated with UEF data and associated performance information by December 29, 2017.
  - After that date, EF and associated performance metrics will not be displayed in the Product Finder.
- Thoughts or insights on the updated QPX materials?



- 1 Version 3.1 Specification Overview
- 2 Updated Version 3 QPX
- 3 Next Steps**
- 4 Discussion



## Next Steps

- Version 3.1 specification finalized on May 23, 2017
  - Products can be certified to Version 3.1
- Updated web service available by May 26, 2017 after discussion with Certification Bodies
- Converted UEF data accepted until December 29, 2017, at which all UEF data must be from testing
  - EPA will remove all EF data from the Product Finder at the end of 2017



- 1 **Version 3.1 Specification Overview**
- 2 **Updated Version 3 QPX**
- 3 **Next Steps**
- 4 **Discussion**



## Discussion

- Open to any more comments and questions
- The slides will be posted online
  - Slides can be found on EPA's Residential Water Heater [product development webpage](#)



## Contact Information

Regarding the specification:

Abigail Daken, EPA

[Daken.Abigail@epa.gov](mailto:Daken.Abigail@epa.gov)

202-343-9375

Regarding test method(s):

Catherine Rivest, DOE

[Catherine.Rivest@ee.doe.gov](mailto:Catherine.Rivest@ee.doe.gov)

202-586-7335

Regarding certification:

Kathleen Vokes, EPA

[Vokes.Kathleen@epa.gov](mailto:Vokes.Kathleen@epa.gov)

202-343-9019

Eamon Monahan, EPA

[Monahan.Eamon@epa.gov](mailto:Monahan.Eamon@epa.gov)

202-343-9589