



# Residential Space Heating

Initiative Updates and Explorations

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# Session Overview

Touch on the following categories:

- ▶ Residential Boiler Specification Change  
10 minutes
- ▶ Direct Heating Equipment  
40 minutes
- ▶ Integrated Space and Hot Water Systems  
40 minutes

# Meeting Guidelines

- ▶ 100% Participation
- ▶ Parking Lot
- ▶ All ideas are valid and valued
- ▶ Meeting closure will outline next steps

This meeting will follow **CEE Guidelines for Program Meetings**

# Topic 1

# Residential Boiler Specification Changes



# Section Overview

- ▶ Update on Committee Activities
- ▶ Outline Next Steps
- ▶ Discussion How to Prioritize Finalization of the Proposed Changes

# Residential Boiler Specification

## ▶ Proposed Addition of a New Boiler Tier

Tier	AFUE
Tier 1	85%
Tier 2*	90%

## ▶ Benefits

- Provides more flexibility while better aligning with current member incentives
- May help to bring down incremental cost of condensing units

# Residential Boiler Specification

## ◀ Temperature Reset Control Specification

- Member interest in both a built in and a retrofit specification
- Can achieve around 10% savings

## ◀ Challenges Identified:

- Savings depend on application
- No performance metric
- Identifying boilers with built in controls

# Specification Next Steps

## **Proposal:**

Move forward with the finalization of the proposed Tier 2 addition now and revise again when temperature reset is ready.

## **Alternate Option:**

Wait to finalize proposed Tier 2 until both specifications are ready.

## Topic 2

# Direct Heating Equipment



# Direct Heating Overview

- ▶ Explain Why We are Discussing this Equipment
- ▶ Define the Types of Equipment Included
- ▶ Provide General Market and Technical Data
- ▶ Discuss Potential Next Steps

# Why Direct Heaters?

## ▼ Interested Parties:

- AHRI asked about CEE interest
- Member interest in gas fireplaces

## ▼ Current DOE Rulemaking

- DOE must amend energy conservation standards by 2010
- Undergoing preliminary activities and analysis

# Definition of Direct Heaters

## ▶ Vented Heating Equipment

- Wall Furnaces
- Floor Furnaces
- Room Heaters

## ▶ Hearth Equipment Included

- Considered either wall furnace or room heater
- DOE is recommending this be a separate product class

# Market Penetration

- ▶ Represent only a small fraction of market
  - Room Heaters: 3% of NG heating
  - F/W/P Furnaces: 4% of NG heating
- ▶ Most common in:
  - Warmer climates (< 4,000 HDD)
  - The west and the south census regions
  - Lower income households

# Available Products

Equipment Type	Heating Type	# of Products
Wall Furnace	Gravity	29
	Fan	69
Floor Furnace	Gravity	9
Room Heater	Gravity	108

# Input and Efficiency Ranges

Equipment Type	Heating Type	Inputs (BTU/hr)	AFUE
Wall Furnace	Gravity	5,000 -50,000	63.0 - 80.0
	Fan	8,000 -65,000	73.0 - 83.0
Floor Furnace	Gravity	30,000 -75,000	57.0 - 58.0
Room Heater	Gravity	18,000 -70,000	58.0 - 70.0

# AHRI Shipment Data: 1990 – 2006

Equipment Type	Heating Type	Average Shipments
Wall Furnace	Gravity	85,750
	Fan	68,642
Floor Furnace	Gravity	12,534
Room Heater	Gravity	42,201

- ▶ Shipments dropped significantly (17-74%) over the time period (except fan type wall furnaces)

# Discussion

- ▶ Are members currently offering programs for direct heating equipment?
- ▶ Should the Gas Committee explore these technologies further?
- ▶ If yes, what priority would this effort take compared to the other residential space heating work?

## Topic 3

# Integrated Space and Water Heating Equipment



# Section Outline

- ▶ Provide a Background on the Work to Date
- ▶ Outline and Prioritize the Remaining Challenges
- ▶ Define CEE's Role
- ▶ Discuss Other Parties that May Help Address Challenges

# Previous Committee Discussions

Focused on Defining the Challenges

- ▼ Defining and Identifying these Systems
- ▼ Current Installation Practices
  - Lack of training/education
  - Often field assembled
- ▼ Lack of a Performance Standard
- ▼ Lack of Design Optimization

# Integrated Space and Water Heating

- ▶ What are the remaining needs and their relative prioritization?
- ▶ What is the appropriate role for CEE?
- ▶ How might other organizations, such as AHRI, help to address these needs?

# **Wrap Up and Next Steps**



# Contact

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