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# ENERGY STAR<sup>®</sup> Commercial Griddle Stakeholder Meeting

February 4, 2009

Orange County Convention Center  
Orlando, FL



# Activities To Date

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- Draft 1 specification released September 8
  - Online meeting held September 25 to discuss proposed requirements
- EPA spent last two months collecting data and conducting additional research
  - Determine approach for double-sided griddles with top partial platens
  - Expand EPA's data set, particularly for electric models
  - Explore family approach to qualification

# Review of Draft 1 Proposal



**Table 1: Energy Efficiency Requirements for Single and Double Sided Commercial Gas Griddles**

Cooking Energy Efficiency*	$\geq 38\%$
<i>Normalized Idle Energy Rate</i>	$\leq 2,600$ Btu/h per ft <sup>2</sup>

**Table 2: Energy Efficiency Requirements for Single and Double Sided Commercial Electric Griddles**

Cooking Energy Efficiency*	$\geq 70\%$
<i>Normalized Idle Energy Rate</i>	$\leq 320$ watts/ft <sup>2</sup>

# Normalized Idle Energy Rate



$$q_{g-idle,n} = \frac{q_{gas} (Btu / h)}{A(ft^2)}$$

$$q_{e-idle,n} = \frac{1000 \times q_{elec} (kW)}{A(ft^2)}$$

- $q_{g-idle,n}$  = normalized gas griddle idle energy rate, Btu/h/ft<sup>2</sup>,
- $q_{gas}$  = gas energy rate during idle , Btu/h,
- $q_{e-idle,n}$  = normalized electric griddle idle energy rate, W/ft<sup>2</sup>,
- $q_{elec}$  = electric energy rate during idle , kW,
- $A$  = area of the bottom cooking surface (ft<sup>2</sup>)

# Normalized Idle Energy Rate *cont.*



For *combination* double-sided griddles

$$q_{ds-idle,n} = \frac{q_{gas} (Btu / h) + 3413 \times q_{elec} (kW)}{A(ft^2)}$$

- $q_{ds-idle,n}$  = normalized gas griddle idle energy rate, Btu/h/ft<sup>2</sup>,
- $q_{gas}$  = gas energy rate during idle , Btu/h,
- $q_{elec}$  = electric energy rate during idle , kW,
- $A$  = area of the bottom cooking surface (ft<sup>2</sup>)

# Draft 1 Proposal *cont.*

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## Test Procedures

- ASTM F1275: *Standard Test Method for the Performance of Griddles*
- ASTM F1605: *Standard Test Method for the Performance of Double-Sided Griddles*

## Effective Date

- May 1, 2009 with launch at NRA Show

# Stakeholder Comments

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- EPA received comments in several areas:
  - Partner commitments
  - Performance levels
  - Test procedures
  - Approach for comparing energy use
  - Data quality and compliance
- To view comments go to Web site:  
[www.energystar.gov/productdevelopment](http://www.energystar.gov/productdevelopment)

# Partner Commitments

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- Annual reporting of shipment data should be voluntary and collected from end users
- EPA Response:
  - Shipment data required for all 50+ categories
  - Third party organization may be used to aggregate data
  - CFS end users are not program partners, we cannot collect data from them

# Partner Commitments *cont.*



- What is the consequence if a manufacturer or equipment supply chain partner misuses the ENERGY STAR label?
- **EPA Response:**
  - ENERGY STAR is a registered mark
  - EPA will follow up with the party in question
  - Party must provide resolution to EPA
  - If nothing is done than Partnership could be revoked; potential legal consequence for non-ES partners

# Performance Levels

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- The proposed 320W/ft<sup>2</sup> is an extremely low target when production capacity and recovery of the griddle is considered
  - **EPA Response:** Current ASTM test procedure takes production capacity and recovery into account when measuring cooking energy efficiency
- Additional test data would be beneficial in order to determine the idle energy rating for electric griddles that fully meet customer expectations
  - **EPA Response:** Manufacturers are encouraged to provide additional data

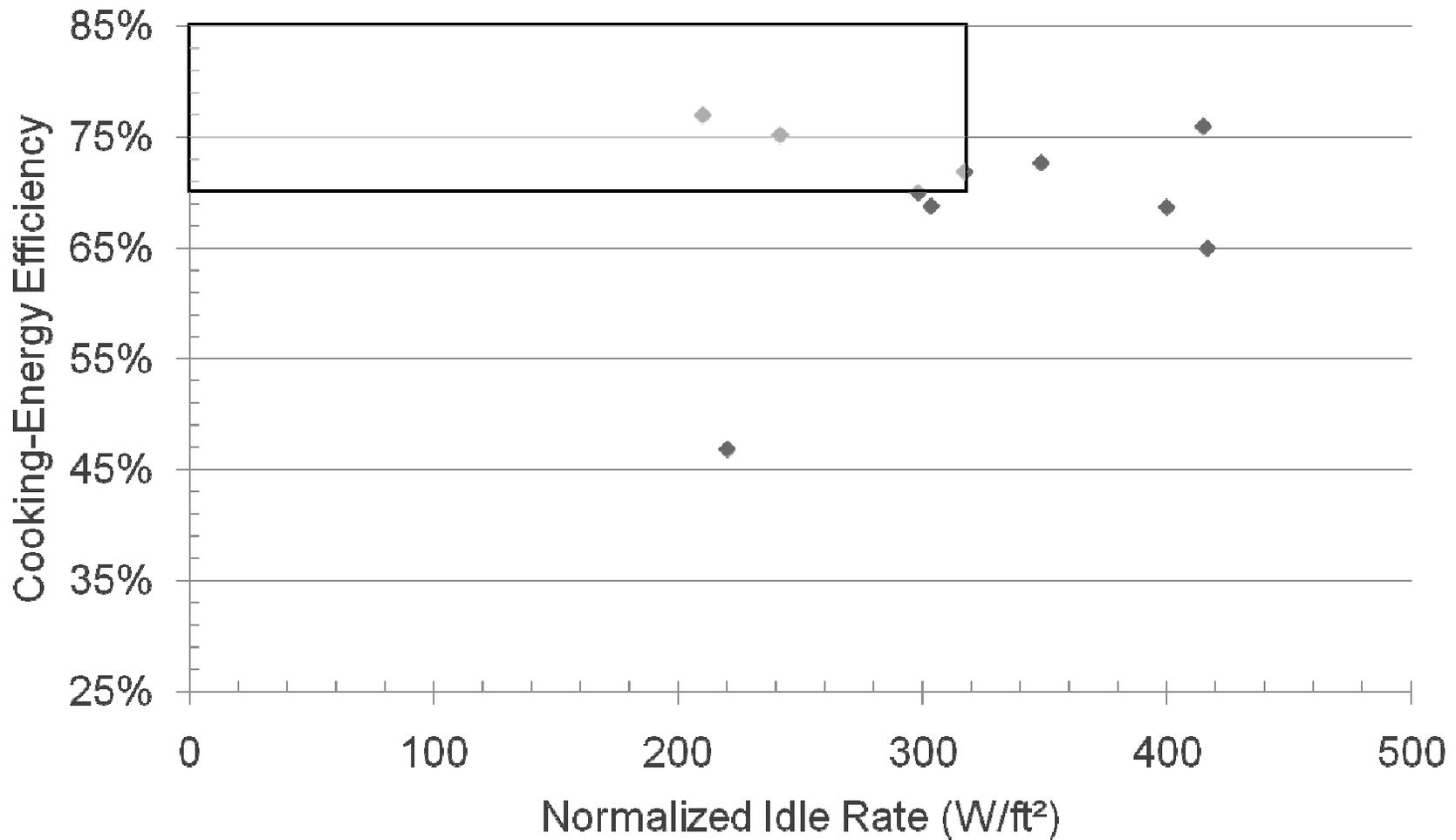
# Additional Testing

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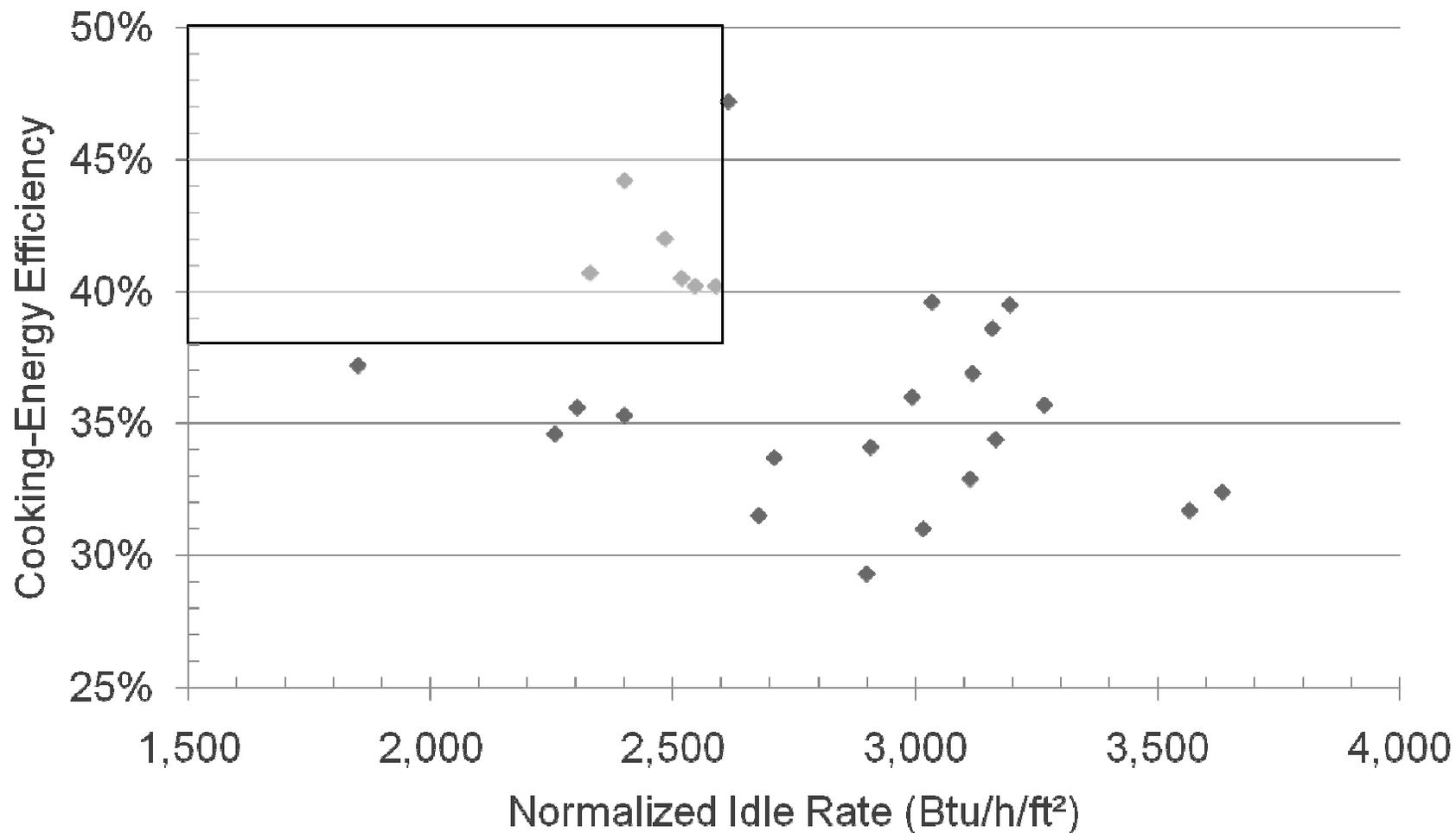


- FSTC tested 2 more electric units
- Data supports levels included in Draft 1 representing the top 25% models in the data set
  - Electric units – 27% (single sided)
  - Gas units – 23% (single sided)

# Updated Electric Griddle Data



# Gas Griddle Data



# Test Procedures

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- EPA should consider using water-boil efficiency which would eliminate need for the laborious cooking efficiency tests
- **EPA Response:**
  - Water-boil efficiency does not represent real world usage and provides an incomplete representation of griddle efficiency by effectively bypassing the griddle's controls

# Test Procedures, *cont.*



- What would be the allowable margin of error for cooking energy efficiencies?
  - For example, would  $39\% \pm 1.50$  be pass or fail for gas griddles?
- **EPA Response:**
  - Typically, for initial qualification the representative unit needs to pass the levels without a margin
  - Efficiency to be based on two significant figures. For example, 37.5% rounds up to 38%, while 37.4 rounds down to 37%. The ASTM uncertainty ( $\pm$ ) in the efficiency test results is not used in this specification.

# Comparing Energy Use

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- Intended approach is to measure cooking surface by measuring splashguard to splashguard
- *Industry suggestion: Use useable* cooking surface area rather than the *max* cooking surface area for normalized idle energy rate
- **EPA Response:**
  - Challenges with consistency in test method
  - In the kitchen, entire surface is used even if not at optimum temperature

# Comparing Energy Use *cont.*

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- What modifications can be made to unit and it retain ENERGY STAR qualification?
- **EPA Response:**
  - EPA looking into UL and/or CSA safety standards for guidance
  - Focus on components that will impact energy use profile

# Energy Use *cont.*



- How will ENERGY STAR treat units with partial top platens?
- **EPA Proposal:**
  - Top platen  $\geq$  80% coverage: test and qualify unit as *double-sided griddle*
  - Top platen  $<$  80% coverage: test and qualify unit as *single-sided griddle* (top off)
  - Unit sold with a top platen option  $\geq$  80% coverage: unit must be tested and qualify as both a *single and double sided griddle*

# Data Quality and Compliance



- Reporting of qualified ENERGY STAR models should be provided by organizations certified to test to ASTM F1275 and F1605
- **EPA Response/Proposal:**
  - ASTM does not certify test laboratories
  - Required third-party testing a challenge due to lack of facilities available to test
  - Instead, manufacturer must submit QPI form along with test report signed by engineer
  - EPA can provide a list of requirements for test report

# Quality and Compliance *cont.*



- How will EPA ensure that units shipped into the field meet the specification?
- **EPA Response:**
  - Manufacturer is responsible for making sure that units shipped into field match the design of the representative model qualified
  - EPA has right to pull products at any time for testing (ENERGY STAR verification program)
  - Program relies on partners (utilities and manufacturers) to alert EPA of non-compliance

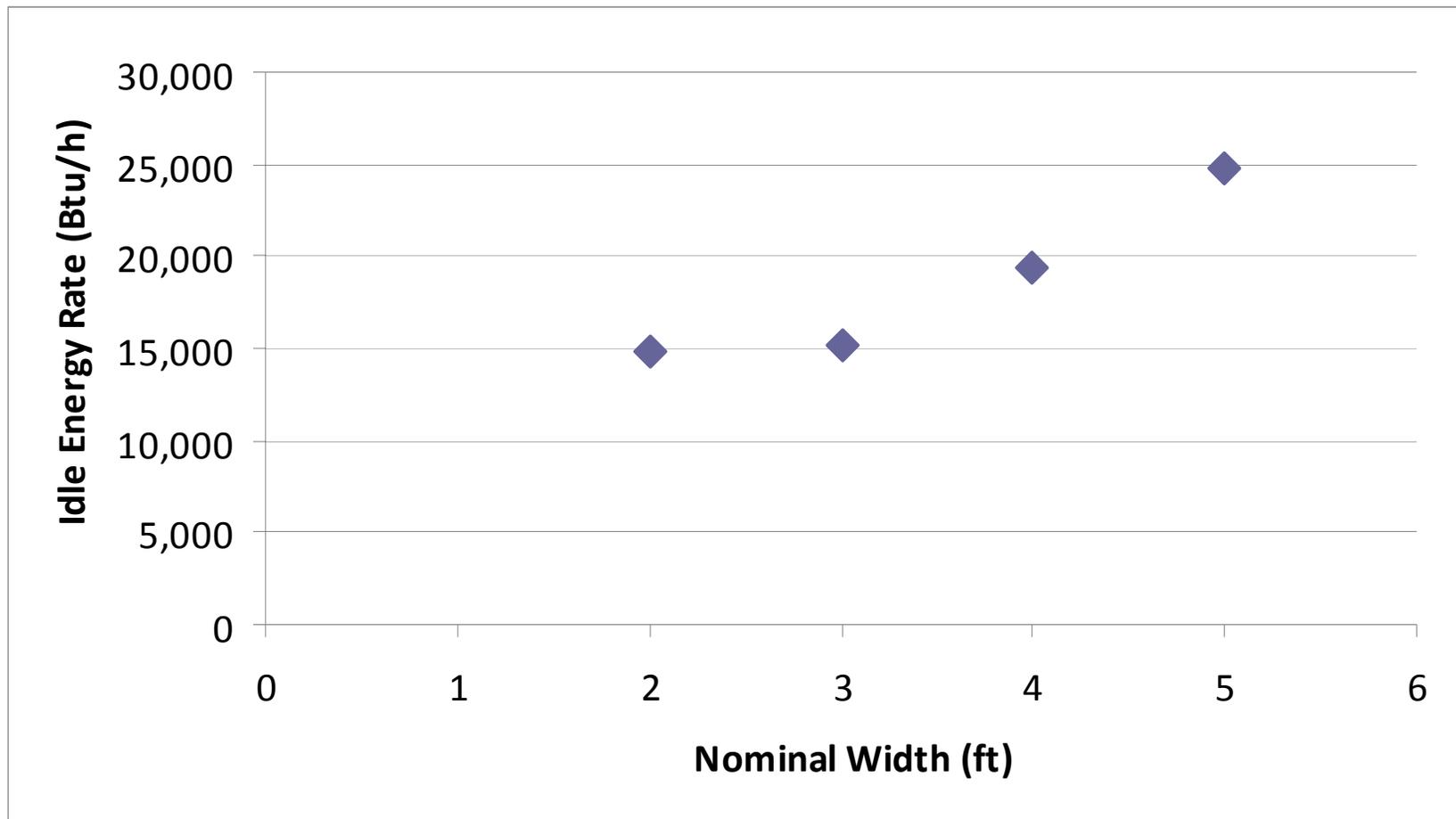
# Additional Revisions

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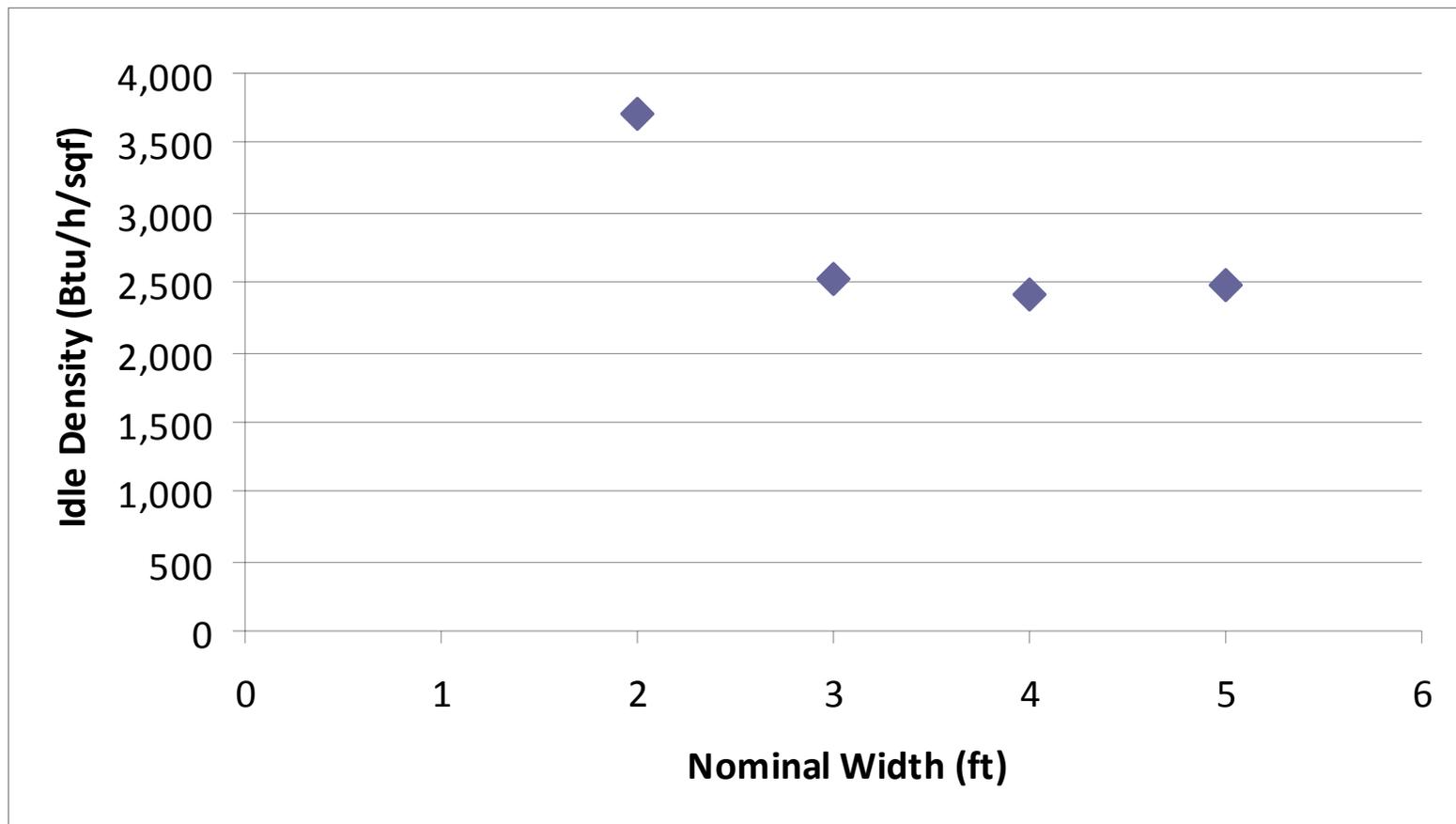


- Product family qualification
  - Reduces testing burden
  - Important to ensure that ENERGY STAR units outperform non-qualified units in every case
  - Current approach for hot food holding cabinets where qualification is based on smallest size in model family
  - PG&E FSTC conducted additional testing to determine whether idle performance was predictable

# Product Family Testing



# Product Family Testing *cont.*



# Product Family Qualification cont.



- **EPA Proposal:**

- Manufacturer may qualify griddles within a family based on 3-ft unit
- Units must be based on same engineering design/platform
- 2-ft unit must be tested, qualified separately
- Manufacturer must submit specification sheets for all individual models qualified under the family approach



# Other Issues for Discussion?

# Next Steps/Timeline

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- Release Draft 2 specification for review by February 27
  - Comments due March 27
- Release final draft specification April 10
- Final version released/effective May 1
- Launch new specification at NRA Show

# Contact Information

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- Rachel Schmeltz, EPA,  
[schmeltz.rachel@epa.gov](mailto:schmeltz.rachel@epa.gov) or (202) 343-9124
- Rebecca Duff, ICF International,  
[rduff@icfi.com](mailto:rduff@icfi.com) or (202) 862-1266
- [www.energystar.gov/productdevelopment](http://www.energystar.gov/productdevelopment)