



# ENERGY STAR<sup>®</sup> Emerging Technology Award: Heat Pump Clothes Dryers

Rebecca Duff, ICF International  
ENERGY STAR Partner Meeting  
Charlotte, NC

November 10, 2011



Learn more at [energystar.gov](http://energystar.gov)<sub>1</sub>

# Emerging Technology Award

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- Recognizes innovative technologies that:
  - Significantly reduce GHG emissions
  - Don't yet meet ENERGY STAR principles
  - Face significant barriers to U.S. market entry or acceptance
- Given annually to products that meet rigorous performance criteria
  - 1 2 categories/year

**ENERGY STAR 2011**  
Emerging Technology Award

# Award Selection Process

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- Criteria for selecting award categories:
  - Commercially available, but not widely adopted
  - Offered by more than one supplier
  - Demonstrated performance through testing
  - GHG reductions at competitive costs
  - Environmentally acceptable
  - Supported by capable partners, adequately financed
  - Well-matched to EPA/ENERGY STAR competencies and roles

# 2012 Award Category Announcement



- Call for nominations released late March 2011
  - More than 20 techs submitted to EPA
- Heat pump clothes dryers offer the best fit
  - First cost significant barrier
  - Performance verified by DOE test procedure
  - Designs available, selling overseas
  - CO<sub>2</sub> reductions of  $\geq 30\%$
  - Significant utility, DOE interest



Bosch Condenser Tumble Dryer with Heat Pump – Available in Europe

# Draft Specification: HPCD



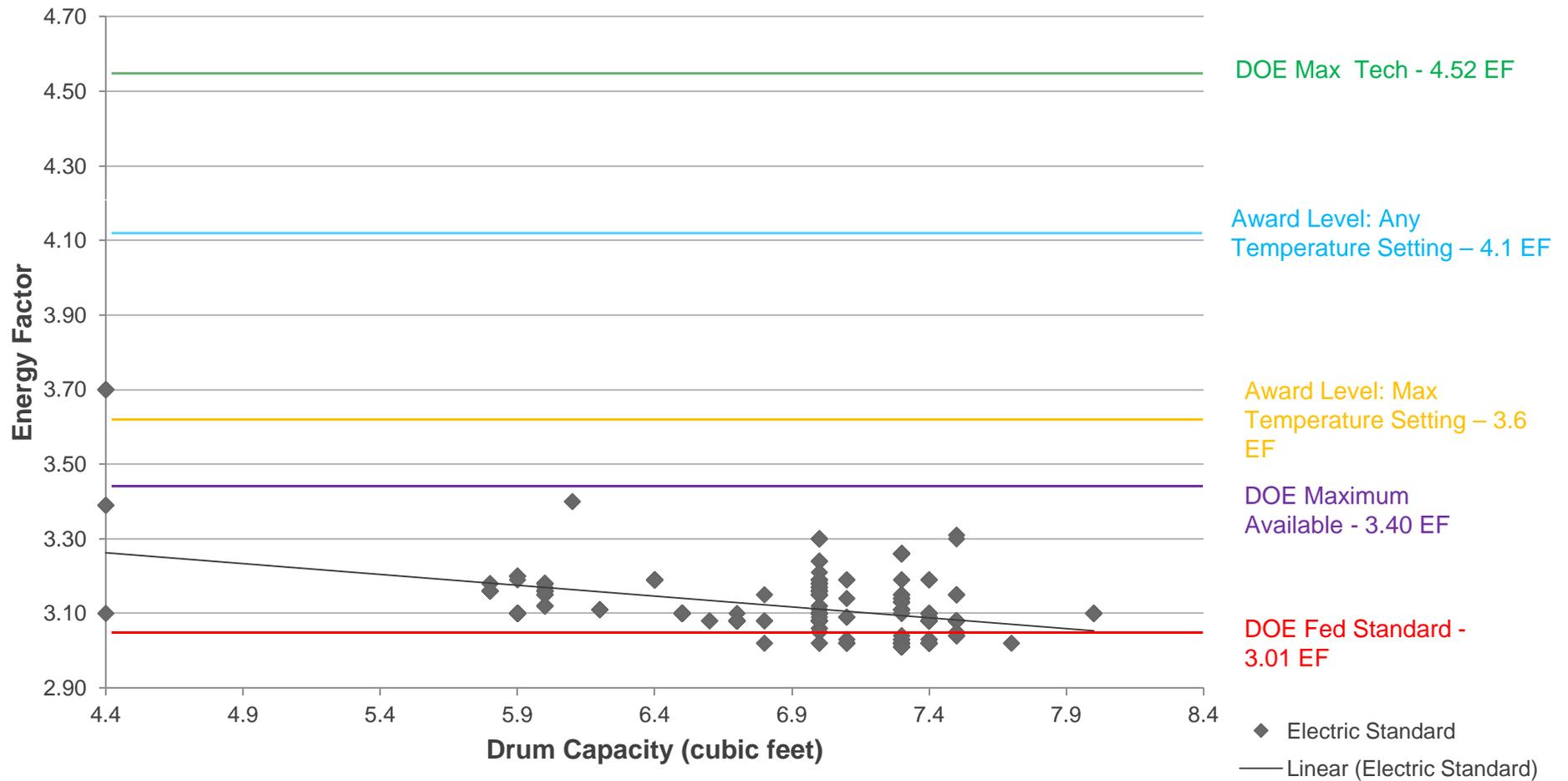
Released on Sept 13, 2011 for stakeholder comment:

Performance Characteristic	Requirements	Required Documentation
Energy Efficiency <sup>1</sup>	<p><math>EF \geq 4.1</math>, achievable in at least one temperature setting<sup>2</sup></p> <p><math>EF \geq 3.6</math>, achievable in maximum temperature setting</p> <p><math>\leq 75</math> minutes to finish one complete cycle in temperature setting that achieves <math>EF \geq 4.1</math><sup>3</sup></p>	<p>Manufacturer documentation of test results consistent with DOE Test Procedure found in 10 CFR part 430, subpart B, appendix D</p>

# Dryer Analysis



## Electric Standard



# Draft Specification: HPCD



Performance Characteristic	Requirements	Required Documentation
Sensors	Temperature and moisture sensing controls, at a minimum	Manufacturer documentation based on definitions found in 10 CFR part 430, subpart B, appendix D. <sup>4</sup> Must include an engineering diagram showing the existence and location of sensing controls

# Estimated Savings

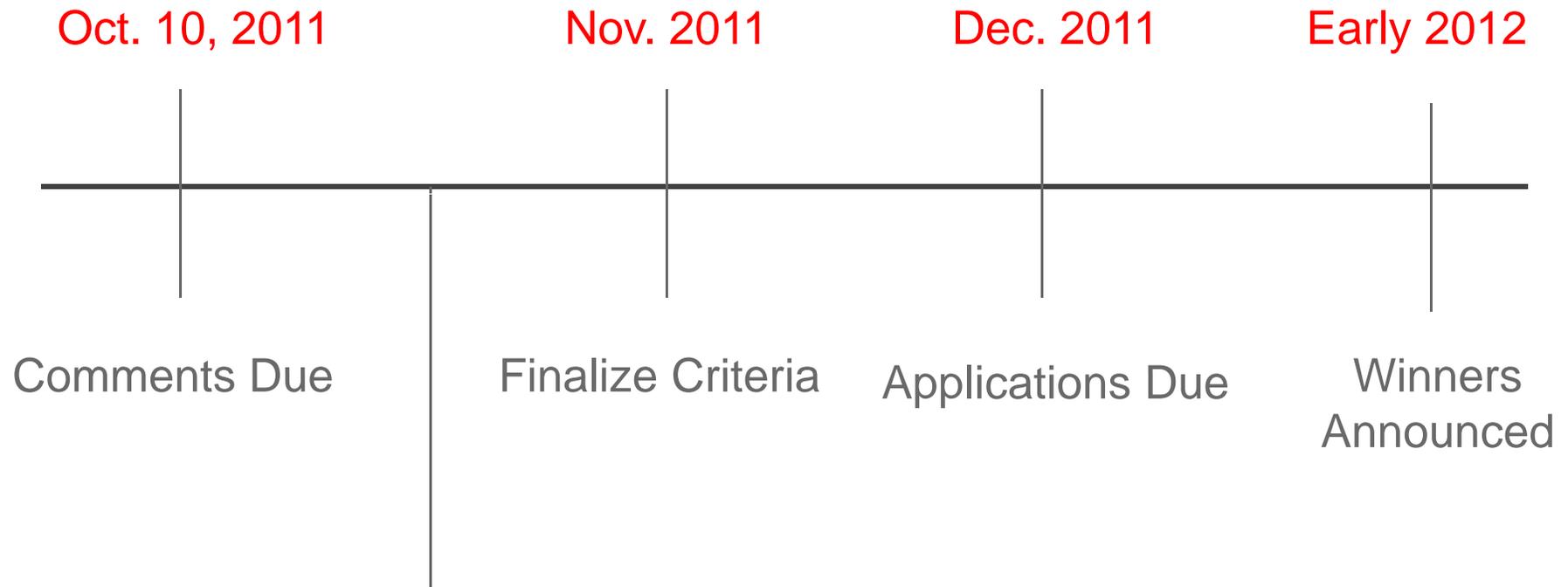


- Reduce electricity use and CO<sub>2</sub> emissions by **32-34%**
- Save **332 kWh/yr** and **5,313 kWh** over lifetime
- Save **\$36/yr** and **\$579** over lifetime
- Save **511 lbs of CO<sub>2</sub>/yr** and **8,182 lbs of CO<sub>2</sub>** over lifetime

Annual Per Unit Savings (\$)



# Next Steps: 2012 Award



ENERGY STAR  
Partner Meeting, NC  
Nov 9 – 10, 2011



# Emerging Technology Award Contacts

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