



# ENERGY STAR<sup>®</sup> Emerging Technology Award

Rebecca Duff, ICF International  
ENERGY STAR Partner Meeting  
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Learn more at [energystar.gov](http://energystar.gov)<sub>1</sub>

# The Opportunity

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- In October 2007, 74 climate experts met to discuss ways to deploy emerging technologies more quickly
  - Growing “green” and “carbon-conscious” consumer markets are making energy efficient technology highly profitable,
  - EPA can speed commercialization of technologies
  - Decision made to develop unique recognition program for emerging climate protection technologies
- In 2008, work began to evaluate technologies for the Emerging Technology Award

# Emerging Technology Award



- 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

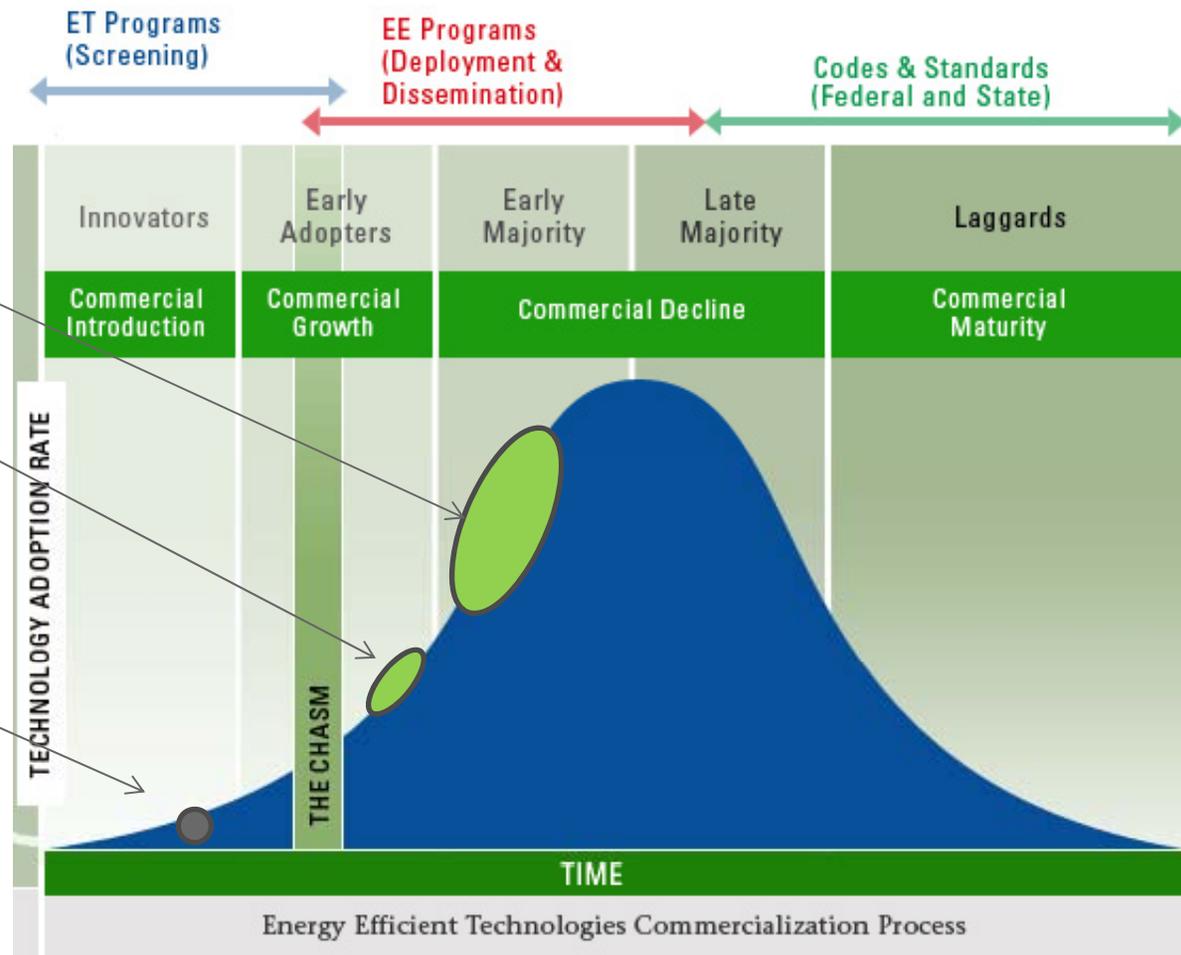
# The Role of Emerging Tech



ENERGY STAR

ENERGY STAR:  
Most Efficient

Emerging Tech: The  
Chasm



# 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

# Nomination/Award Process



1. **Spring/Summer** – call for Award category nominations
2. **Late Summer** – EPA selects Award category and develops performance requirements
3. **Fall** – EPA finalizes requirements and opens applications process
4. **Fall/Winter** – Manufacturers submit applications to EPA
5. **1<sup>st</sup> Quarter, following year** – EPA announces Award winners

# 2011 Award: Micro-CHP

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- Simultaneous generation of electricity and heat
- Awarded two Micro-CHP technologies:
  - Freewatt 1kW system by ECR International
  - Ecopower 5kW system by Marathon Engine Systems
- CO<sub>2</sub> reductions estimated at 20-30%
- Barriers – first cost, product knowledge

# Micro-CHP Initiatives

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- Promotion/outreach efforts to date:
  - Award webpage
  - Case study development
  - Outreach to ENERGY STAR multi-family
  - Outreach to utilities
  - Working with REM/Rate to incorporate in new construction software
- EPA has decided to extend Micro-CHP Award into 2012

# Outreach Materials



## ENERGY STAR 2011 Emerging Technology Award

### Award Winning Technology: ecopower™ Micro Combined Heat and Power Demonstrates Savings in New York City

Installation of new technology in a New York City apartment building shows that Micro Combined Heat and Power (Micro-CHP) can **save almost \$13,000 in building energy costs and reduce CO<sub>2</sub> emissions by almost 94,000 lbs annually.**

#### What is Micro-CHP?

Micro-CHP is a hybrid technology that provides heating to the home while simultaneously co-generating electricity on-site. While this technology has been used for years in Europe and Japan, it is a fairly new concept to the U.S. market.

#### What is the ENERGY STAR® Emerging Technology Award?

The ENERGY STAR Emerging Technology Award recognizes innovative products like Micro-CHP that have the potential to significantly reduce greenhouse gas emissions but face certain barriers to U.S. market penetration. EPA's intent in promoting award winners is to raise the profile of the technologies, helping to build demand so cost may ultimately be reduced and availability broadened.

One of the technologies chosen for the 2011 ENERGY STAR Emerging Technology Award is the ecopower™ Micro-CHP manufactured by Marathon Engine Systems.

#### Case Study Results: Micro-CHP Benefits and Savings

The Melrose Five Project was organized to demonstrate the savings from Micro-CHP, with assistance from the New York State Energy Research and Development Authority (NYSERDA). A 63-unit multi-family apartment building located in the Bronx, NY was chosen to install two ecopower™ Micro-CHP systems, each providing domestic hot water heating and 4.7 kW of electricity at the same time. At the end of one year of monitoring, the ecopower™ systems combined:

- Saved \$12,936 in building energy costs;
- Avoided 93,607 lbs of CO<sub>2</sub> emissions (equivalent to almost four average U.S. homes);
- Generated 74,100 kWh of electricity for common areas (87% of common area electricity demand); and
- Supplied 4,574 MBtu of hot water heating and supplemented



## ENERGY STAR Emerging Technology Award:

...ative products that have the potential to significantly reduce greenhouse gas emissions.

...ing technologies that may not yet meet key principles associated with categories eligible for the label (e.g. broadly available, proven and cost-effective to the consumer) or may be relatively more difficult to install and operate.

...y of products, helping to build demand so cost may ultimately be reduced and availability

...rd given to products that meet rigorous performance criteria in 1–2 select categories per year.

### ENERGY STAR Emerging Technology Award:

...rd winners will be featured on website and will have the opportunity to promote their products in product literature and marketing materials in accordance with EPA guidelines.

With over 17,000 partners in dozens of sectors, ENERGY STAR and EPA are uniquely placed to identify winners with partners interested in emerging efficient technologies.

All emerging technologies face barriers to wider market acceptance. In some cases, EPA may encourage companies to develop strategies to overcome these barriers.

### Categories are Selected

...y selected through a transparent stakeholder process that evaluates technologies based on the criteria that technology must be:

...ailable, but not widely adopted (<5% market share)

...have had one supplier

...demonstrated strong environmental performance; third party verified

...effectively reduce greenhouse gases at competitive costs

...be environmentally acceptable (technology use is a net plus for the environment)

...be supported by capable partners who are adequately financed with established business records

...and have demonstrated EPA/ENERGY STAR competencies and appropriate roles

### Award Categories

2011 Award

2012 Award

### Resources

2011 ENERGY STAR Emerging Technology Award Graphic Guidelines (1.3MB)

### Key Meetings and Dates

October 10, 2011: Comments due on Draft 1 Heat Pump Clothes Dryer Requirements

2011 ENERGY STAR Products Partner Meeting: Appliances, Lighting, Electronics, Water Heaters

# 2012 Award Category: Dryers



- 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

# HPCD Criteria Development

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- Draft criteria released for comment in September 2011
  - EF, drying time, temp/moisture sensors
  - Warranty, safety, commercialization and maintenance plans
  - **Comment deadline October 10, 2011**
- Final criteria scheduled for release in Nov.
- Application submission in December
- Awards announced early 2012

# How to get involved

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- Provide comment on draft HPCD criteria
  - Continued discussions at Laundry Session on Thursday, 8 – 10 a.m.
- EPA is looking for partners to promote Award winners/educate consumers:
  - Case study development
  - Incentive programs
  - Purchasing groups
  - Pilot projects/demonstrations

# Emerging Technology Award Contacts

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