



EPA Climate Choice Program

Promoting Emerging Technology for Climate Protection

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JICOLP Seminar

Governments are Setting Large Reduction Goals

- Group of 8 (G8) Countries
 - Reduce greenhouse gas emissions 50% by 2050
- US State of California
 - Reduce greenhouse gas emissions 30% by 2020
- US President-Elect Obama
 - Reduce greenhouse gas emissions 80% by 2050



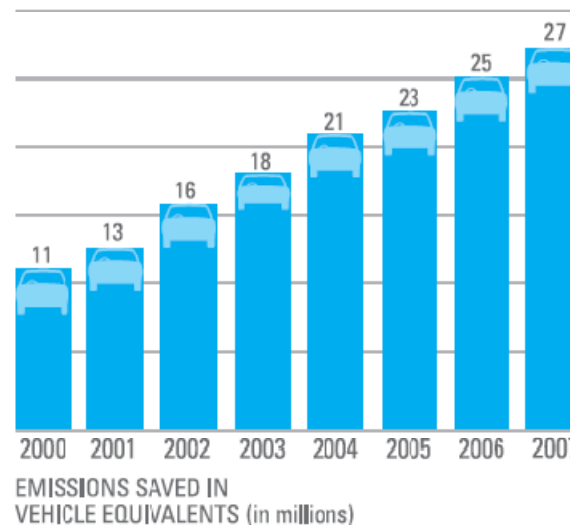
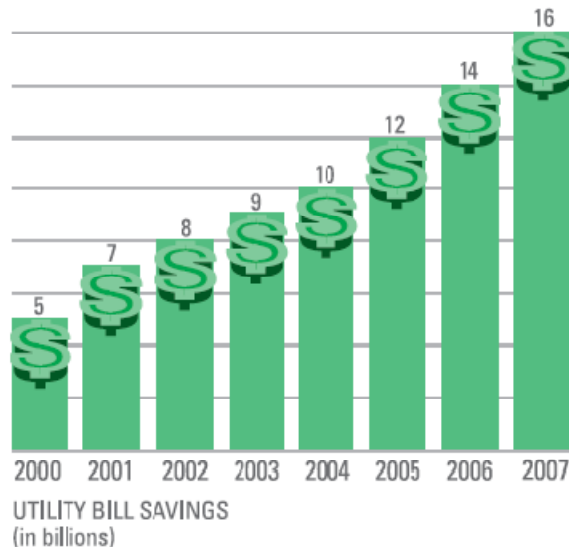
ENERGY STAR

- International program: Australia, Canada, The European Union, Japan, New Zealand, the United States and Taiwan
- The ENERGY STAR program labels energy-efficient products in more than 50 categories. Examples include:
 - Heating, ventilation, and air conditioning equipment
 - Appliances
 - Computers
 - Homes
 - Buildings
 - Manufacturing plants
- Guaranteed energy and cost savings



ENERGY STAR Works

- In 2007, US citizens saved \$16 billion on energy bills and prevented 27 million vehicles worth of greenhouse gas emissions
 - almost 5% of US electricity demand
- More than 2.5 billion products purchased across 50 product categories
- More than 9,000 organizations working with ENERGY STAR
- Significant investment by government and private sector
- Competition for the ENERGY STAR label has made products more efficient





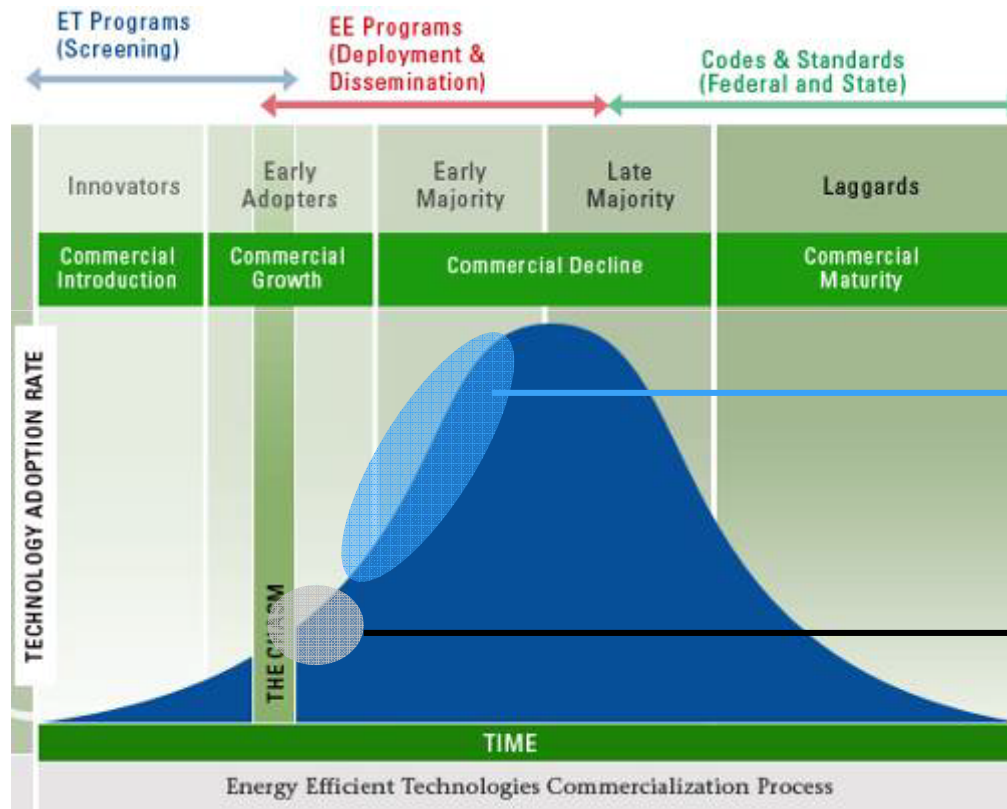
Need to Go Faster & Further Introducing: **Climate Choice**



- Why Climate Choice?
 - New technologies needed to reduce greenhouse gases (GHGs)
 - Important to promote technologies earlier in the technology development and market adoption cycle
- Program goals
 - Accelerate market adoption of emerging technologies
 - Move technologies closer to ENERGY STAR readiness
 - Help environmentally-motivated consumers find the technologies they want to reduce GHGs
 - Help companies find early adopter & environmentally motivated customers



Climate Choice Targets Emerging Technologies



ENERGY STAR

- mass market consumer
- cost-effective payback)
- proven technology
- no sacrifice in performance
- reliable savings – easy design, installation, and maintenance

CLIMATE CHOICE

- new recognition program
- focuses on technologies earlier in adoption curve
- verifies performance, greenhouse gas and energy savings
- technologies may be more costly until economies of scale achieved
- provides customized technology assistance
- look for the Climate Choice logo



Climate Choice Criteria

- Commercially available, but not widely adopted (~<5% market share)
- Offered by more than one supplier
- Demonstrated and verified environmental performance standards
- Potential to significantly reduce greenhouse gases
 - At competitive costs for customers and for society
- Capable partners, adequately financed, established business record
- Challenges matched to EPA competencies and appropriate roles.



Climate Choice Benefits

- Recognition
 - Website
 - Trials & promotion
 - Mark for “Climate Choice”
- Tailored technology assistance
 - Clearing unintended regulatory barriers
 - Identifying customers & partners
 - Opportunities for information sharing through our networks
- ENERGY STAR candidate development, where appropriate



Pilot Projects

- Combined heat & power
- Advanced new home construction technology package
- Additional technologies will be selected January 2009



Residential Cogeneration (Commercialized in Japan)

- Hybrid technology that combines a Honda internal-combustion engine generator with a high-efficiency home furnace (also known as Micro combined heat and power).
- Produces both electricity and heat for a home, as opposed to a traditional furnace that just supplies heat.
- The electric power produced by the CHP system displaces electric power generated by inefficient central power plants, reducing CO₂ emissions.





Advanced New Home Construction



- Super efficient insulation
 - Best-available windows
 - 100% efficient lighting & appliances
 - Solar hot water in warm states
 - Efficient water distribution
 - Top-tier heating and cooling equipment
-Cuts energy use in half!

Renewable energy to reduces
carbon emissions to zero.



US EPA Invites JICOLP Members to Nominate Climate Choice Technologies

- Anyone may submit a technology nomination.
- If a company nominates a technology that it produces, it must provide three independent (not affiliated with or paid by the company) expert reference.
- Applications must contain:
 - Technology Description
 - Environmental Description
 - Company Description
 - Testing Procedures
- Application available at:
<http://www.epa.gov/cppd/climatechoice/nominate.htm>
- First round of applications due 1 December 2008.



Contact

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www.epa.gov/cppd/climatechoice

Back-Up Slides

Advanced New Home Construction

- **Advanced**

- A ‘bundle’ of best available and advanced technologies that cut a home’s energy-related carbon emissions in half.

- **Appropriate**

- Technologies prescribed in builder option package are appropriate to geographical/climate characteristics.

- **Validated**

- Project must meet specified requirements, be verified and field-tested in accordance with the HERS Standards by a RESNET-accredited Provider, and meet all applicable codes.

Advanced New Home Construction

“Best Available” technologies: cost-effective, widely available, easily integrated, not commonly used:

- Thermal-break wall assemblies
- Best-practice installation for heating, cooling and ventilation systems
- Efficient water distribution systems
- Advanced lighting, appliances, and plug-load management
- Moisture control

'Advanced' technologies: promising commercially available technologies that still need to address some combination of cost-effectiveness, technical infrastructure, and production builder compatibility issues. Examples include:

- ‘Super insulation’ wall system
- ‘Super-efficient’ high-performance windows
- Air-tight HVAC air handler units with high-efficiency variable-speed fans
- Solar domestic water heating systems/desuperheater with geothermal heat pump
- Super high-efficiency HVAC equipment