How does this ENERGY STAR program meet utility goals?

Energy Savings

- ENERGY STAR qualified homes are at least 15-20% more efficient than the 2004 International Residential Code (IRC)
  - include additional energy-saving features that typically make them 20-30% more efficient than standard homes.

- ENERGY STAR for New Homes programs reduce energy demand and utility bills, while improving the comfort, quality, durability, and affordability of homes.
  - Average National savings/home: $447
  - Average Carbon savings/home: 0.74 MTCe
  - 2,030 kWh and 131 therms with electric cooling and gas heating, or
  - 3,500 kWh with electric cooling and heating annually.
  - 1kW peak demand reduction per house.
One electric utility reported a levelized cost of 0.06 $/kwh

- However, ENERGY STAR Homes delivers both electricity savings and heating fuel savings. For programs for integrated electric and gas savings, the cost effectiveness will be greater.

Over 50 regional sponsors around the country have found strong cost-effectiveness performance.
How does the Program work?

- EPA partners with utilities, homebuilders, and Home Energy Raters to promote energy-efficient technologies and building practices.

- Home builders construct homes to the ENERGY STAR specifications.

- Third party, Home Energy Raters verify that homes meet the ENERGY STAR guidelines.

- The ENERGY STAR label makes it easy for homebuyers to select energy-efficient homes.
How successful has ENERGY STAR been recently?

• By the end of 2007:
  – More than 5,000 partners—including more than half of the nation’s 100 largest builders—were voluntarily constructing homes to earn the ENERGY STAR.
  – Nearly 12% of all new homes nationwide earned the ENERGY STAR (2006).
  – In 25 major metropolitan areas and states, more than 20% of new homes earned the label.
  – About 850,000 homes have earned the ENERGY STAR.
How can ENERGY STAR support utilities in sponsoring New Homes programs?

ENERGY STAR provides utilities support to implement an ENERGY STAR New Homes Program

- Technical Support and Program Development Support
  - Spec definition
  - Training
  - Best Practice Guidebooks and national meetings

- Builder recruitment
  - Training and presentations for builder recruitment

- Outreach and Promotion
  - Marketing toolkit
  - Outreach Partnership Campaign
  - Brochures and fact sheets
  - Builder Recognition
How can ENERGY STAR support utilities in sponsoring New Homes programs?

Technical Support

– EPA sets technical specifications for label
– EPA provides guidance for implementing technical specifications and assists in developing regional variations.
– EPA also provides extensive guidance and training, including the Thermal Bypass Checklist Guide, through its Web site.
How can ENERGY STAR support utilities in sponsoring New Homes programs?

Program Development Support

• New Sponsor and Utility Partner Guide
  Reference for utilities when developing new ENERGY STAR Homes programs or improving existing programs.

• Annual Utility/Sponsor Meeting
How can ENERGY STAR support utilities in sponsoring New Homes programs?

Builder Recruitment
- Utilities can use presentations developed by EPA to:
  - train homebuilder sales staff,
  - recruit new builders, and
  - educate allies in the realty and appraisal industries.
How can ENERGY STAR support utilities in sponsoring New Homes programs?

Outreach and Promotion

ENERGY STAR Marketing Toolkit
Web-based tool allows homebuilders to quickly create customized consumer materials that showcase the features and benefits of their ENERGY STAR qualified homes.

– Templates available for customization include:
  • Features Flyer
  • Checklist Flyer
  • Benefits Flyer
  • Cost Flyer
  • Lighting Flyer
  • Environmental Flyer
  • Benefits Display Card
  • Web Buttons/Banners
How can ENERGY STAR support utilities in sponsoring New Homes programs?

ENERGY STAR Outreach Partnership Campaign

– EPA provides cooperative advertising funds to groups of homebuilders, raters, and utilities.
How can ENERGY STAR support utilities in sponsoring New Homes programs?

Brochures and Fact Sheets

- Utilities can download or order hardcopies of materials that explain the features and benefits of ENERGY STAR qualified homes to consumers and homebuilders.
How can ENERGY STAR support utilities in sponsoring New Homes programs?

Recognition

— EPA provides partners with recognition for their participation through:

• Awards for meeting program milestones
• Listing on the ENERGY STAR Web site (with contact information and links to builder web sites).
How are utilities implementing ENERGY STAR homes programs?

**Oncor Electric Delivery**

- Co-branded marketing materials
- Sales training
- Technical training
- Realtor training
- Quality assurance
- Financial incentives
- More than 60,000 ENERGY STAR homes since 2001
- Approximately 7,000 ENERGY STAR homes in 2007
- 242 builder applications for 2008
- Over 10 MW & over 11 million kWh of annual energy savings for the utility
How are utilities implementing ENERGY STAR homes programs?

Georgia Power

- Co-branded marketing materials
- Sales training
- Technical training
- Financial incentives
- Sponsor rater certification
- ENERGY STAR statewide “Awareness Weekend”
- Pilot program 2006-2007
- Program launched in January 2008
- Goal of 10,000 ENERGY STAR homes per year by 2010
For New Homes: Advanced Lighting Package

- A valuable marketing tool to promote energy efficient residential lighting infrastructure
- A way for builders to distinguish their products
- A simple way for utilities & EEPS to incentivize efficient lighting infrastructure
- Adopted by various green building programs:
  - U.S. Green Building Council’s LEED for Homes
  - National Association of Home Builders’ Green Building Guidelines
  - Built Green Colorado
- Definition:
  - 60% of all hardwired fixtures, indoor and outdoor, are ENERGY STAR qualified
  - All ceiling fans installed must be ENERGY STAR qualified
For New Homes: Advanced Lighting Package

• Tools and Resources:
  – Promotional literature for builders and consumers
  – Promotional language for use in builder advertising
  – ENERGY STAR Training Center
  – ALP Energy Bill Savings Chart
  – Training sessions for:
    • Builders
    • Electrical Distributors
    • Showrooms
  – Case Studies
**Increased Lighting Savings (California)**

- ALP can deliver significant additional energy savings!

<table>
<thead>
<tr>
<th>High Efficacy Fixtures per Single Family Home</th>
<th>Total # of Required Qualified Fixtures</th>
<th>Annual Electricity Use (kWh)</th>
<th>Annual Electricity Savings (kWh)</th>
<th>Annual Electricity Savings (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T24-2005 Compliant (Baseline)</td>
<td>13</td>
<td>1642</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>60% ENERGY STAR Qualified Fixtures (ALP minimum)</td>
<td>19</td>
<td>1296</td>
<td>346</td>
<td>21%</td>
</tr>
<tr>
<td>75% ENERGY STAR Qualified Fixtures</td>
<td>24</td>
<td>1097</td>
<td>545</td>
<td>33%</td>
</tr>
<tr>
<td>100% ENERGY STAR Qualified Fixtures</td>
<td>32</td>
<td>655</td>
<td>987</td>
<td>60%</td>
</tr>
</tbody>
</table>
ENERGY STAR:

Home Performance with ENERGY STAR

A Joint EPA and DOE Program
How does this ENERGY STAR Program meet Utilities' Goals?

Energy Savings

- Total energy saving of 20% to 30% can be achieved for heating and cooling for existing homes
- Home Performance with ENERGY STAR reduces energy demand and utility bills, while improving the comfort, quality, durability and affordability of homes

Table 1. Potential per Home Energy Savings by Climate Zone

<table>
<thead>
<tr>
<th></th>
<th>NORTHEAST</th>
<th>MIDWEST</th>
<th>SOUTH</th>
<th>WEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity (kWh)</td>
<td>1400</td>
<td>1700</td>
<td>4600</td>
<td>1400</td>
</tr>
<tr>
<td>Natural Gas (Therms)</td>
<td>400</td>
<td>400</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Typical Improvements</td>
<td>Increasing attic insulation; insulating crawl spaces or rim joists; duct sealing, repair and insulation; air sealing; and installing programmable thermostat, energy-efficient replacement water heater, heat pump, air conditioner, furnace, boiler, lighting or windows.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Average national savings/home: $400
- Average carbon savings/home: .6 MTCe
- Estimated peak electricity demand savings
  - 1.6 kW per home in summer
  - 0.9 kW per home in winter
Program Cost-effectiveness

- Estimated levelized cost of conserved energy (CCE) of 0.05 $/kWh*

*Based on information from Austin Energy
Home Performance with ENERGY STAR

• Encourages comprehensive home energy improvements for existing homes
• Helps capture significant savings potential of a whole-house approach
• Utility recruits contractors, helps direct marketing, and QA/QC
• Verification documents energy savings
How does the Program Work?

- **Whole-house energy inspection**
  - Energy specialist trained in building science
- **Diagnostic testing (before work)**
  - Can include: air infiltration, HVAC air flow,
  - duct leakage, infrared imaging
- **Summary report**
  - Results
  - Recommendations
  - Estimated costs and savings
- **Contractor makes Improvements**
- **Test out to ensure improvements achieve savings**
- **Quality control inspections of work**
National Activity

Existing Programs

Launching Programs

Considering Programs

OR - Energy Trust of Oregon
CO - E-Star Colorado
Ft Collins Utilities City of Bolder Colorado Springs
WI – Focus on Energy
VT – Efficiency Vermont
NY - NYSERDA
First Energy
NJ - NJBPU
NY - LIPA
Mass Saves – NGRID & NStar
ME – Energy Office
ID – Energy Division
WY – Energy Office
Peoria – TRICON
Missouri DNR
Georgia Power
Austin Energy
Jackson EMC
So. California Edison
Phoenix - FSL
City of Anaheim

Over 36,000 homes retrofitted to date
20 regional sponsors overseeing program
Recent Success

- Programs in-place or in-development in 20 markets.
  - New York State Energy Research and Development Authority
    50 participating contractors helped New Yorkers invest over $110 million to improve the energy efficiency of more than 15,000 homes and save over 16,000 Mwh of electricity and over 600,000 MMbtu of fossil fuels. As of 2005, the on-Peak Coincident Demand Reduction attributed to the program was 1.7 MW.
  - Wisconsin - Focus on Energy
    Saving on average 1,100 kWh of electricity and 500 therms of natural gas per home.
  - Austin Energy
    Over 70 participating contractors completed 1400 projects in 2005 with a peak demand savings of over 3000 kW.
How can ENERGY STAR support Utilities in Sponsoring HPwES?

- Program Start-up Guides
  - Program Development Fact Sheets
  - Program Plan Best Practices Guide
  - Contractor Business Development Guide
  - Successful Contractor Profiles
  - Quality Assurance Guides
  - Finance Start-up Guide
  - Annual Symposium for Partners at ACI Conference
How can ENERGY STAR support Utilities in Sponsoring HPwES?

Outreach and Promotion

- **Web-based Consumer tools**
  - *ENERGY STAR Yardstick*
    - Based on energy bills, ranks the home based on energy use
  - *ENERGY STAR Home Advisor*
    - Provides homeowners with recommendations for improvements

- **Tools can be framed on utilities’ web-page**
How can ENERGY STAR support Utilities in Sponsoring HPwES?

- Marketing Toolkit (for both sponsors and contractors)
  - Contains
    - Fact sheets
    - Print ads
    - Direct mail letters
    - Yellow Page ad templates

- Templates for Home Energy Make-Over Contests

- Sales and marketing training for contractors

- Web-site template
How can ENERGY STAR support Utilities in Sponsoring HPwES?

Partner Support

• Annual Partners Meeting and Symposium held at national ACI conference
• Financial Support for Quality Assurance Provider Network for sponsors
  – Building Performance Institute (BPI)
  – RESNET
• Federal grant support network for non-profit sponsors
• DOE supporting standards development with BPI
• Award Recognition Program for sponsors and contractors