



# **ENERGY STAR® Workshop**

## **Residential Products and Services Breakout Session**

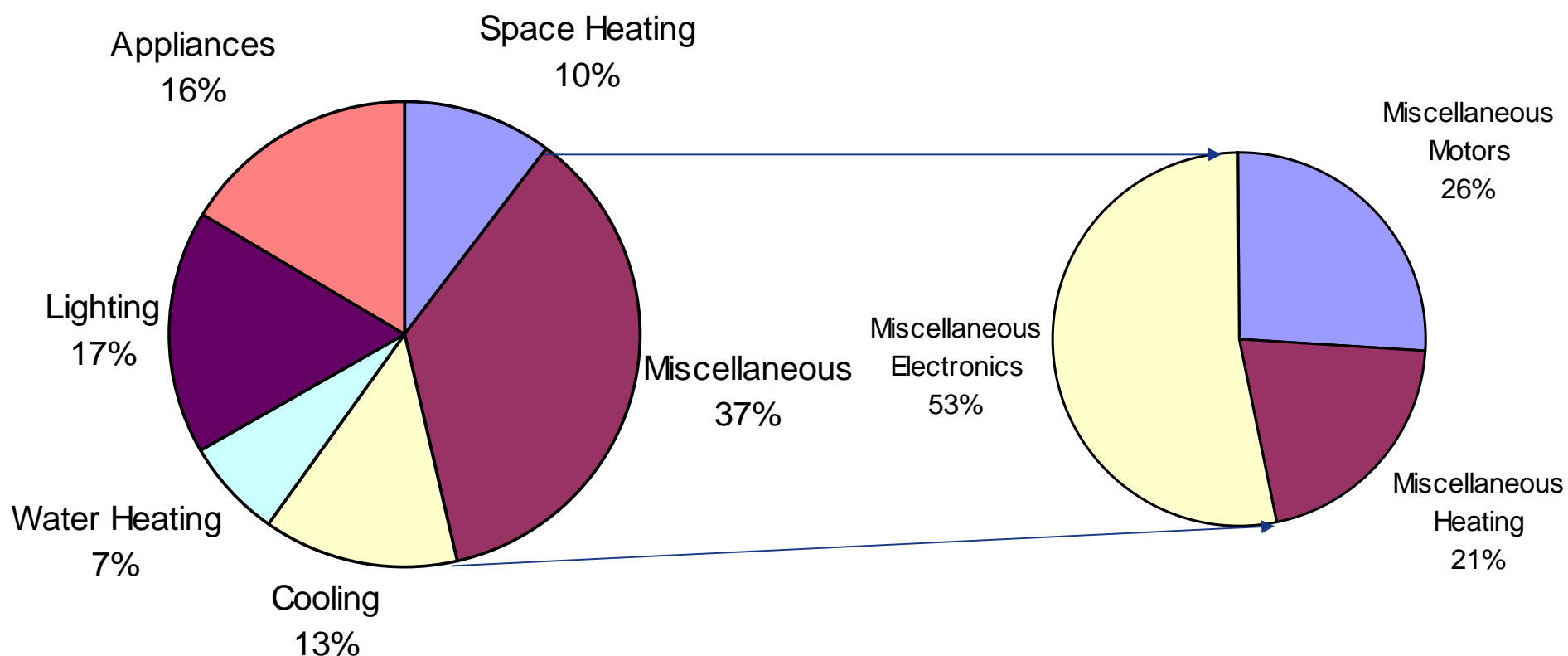
Hewan Tomlinson  
US EPA  
January 15, 2008

# Agenda



- How ENERGY STAR Supports Program Administrators
  - Consumer Electronics
  - Residential Light Fixtures
  - Change a Light

# Summary of National Residential Electricity Consumption by End Use for 2020



- Projected 2020 U.S. residential electricity consumption: 1,691 TWh
- Electronics products—under Miscellaneous—will account for 19% of total residential electricity consumption.

End Use Consumption Estimate is from EIA's Annual Energy Outlook 2006, Report #:DOE/EIA-0383(2006)

# Consumer Electronics



- Electricity consumption by US households more than doubled since 1980; expected to rise another 20% by 2015
- Miscellaneous energy use growing fast
  - Electronics account for 11% of residential, 4% of total US electricity consumption
  - 3 products—analogue TVs, desktop computers, and set-top boxes—account for two-thirds of residential electronics electricity consumption
  - Number of products in homes has doubled since 1997
- Miscellaneous energy use threatens savings achieved by other traditional product programs
- Utility savings goals continue to increase

# Consumer Electronics Resources



- ENERGY STAR can help reduce new program costs
  - Performance specifications
  - Industry partnerships
  - Program design support for successful cooperative promotions
  - Support for fast, cost-effective program development and deployment
    - Turnkey consumer messaging on product attributes, savings, etc.
    - Online tools
    - Marketing material templates
    - Consumer Podcasts
  - National social marketing campaign
    - Leverage locally for high impact, cost-effective outreach

# Consumer Electronics ENERGY STAR Specifications



Product Category	Status	ENERGY STAR Modes
<b>Computers &amp; Notebooks</b>	Tier 2 under development; anticipated effective date July 1, 2009. Tier 1, Version 4.0 effective July 20, 2007	Idle; Sleep; Standby (Off) External and internal power supply requirements
<b>DTAs</b>	Version 1.0 effective January 31, 2007	On; Sleep
<b>External Power Supplies (EPS)</b>	Version 2.0 under development; anticipated effective date second half of 2008. Tier 1, Version 1.1 effective January 1, 2005	Active; No-Load
<b>Monitors</b>	Specification revision initiated in October 2007 Tier 2, Version 4.1 effective January 1, 2006	On; Sleep; Off
<b>TVs</b>	Version 3.0 under development; anticipated effective date November 2008.	On Standby
<b>Imaging Equipment</b>	Tier 2 under development; anticipated effective date April 1, 2009. Tier 1, Version 1.0 effective April 1, 2007	Typical Electricity Consumption (TEC) for high-use Sleep and Standby for other products EPS requirements
<b>Audio/DVD</b>	Tier 2, Version 1.0 effective January 1, 2003	Standby
<b>Telephony</b>	Version 2.0 effective November 1, 2006	Standby; Also includes EPS requirements
<b>Battery Charging Systems</b>	Version 1.0 effective January 1, 2006	Nonactive Energy Ratio covers Battery Maintenance and Standby

# Consumer Electronics: TVs



- Large and Growing U.S. Market
  - More TVs per household, larger screen sizes, increased time in on mode, and feature-rich models are fueling energy consumption increases
  - Digital Broadcast Signals Transition: Feb. 18, 2009
- New ENERGY STAR Specification
  - Standby and On
  - Technology neutral
  - Tier 1: Nov. 2008
  - Tier 2: Sep. 2010



# Opportunities for TVs



- Partner with retailers on negotiated cooperative promotions for TVs, home theatre
- Secure more energy savings through product bundling (home theatre)
  - TV, set-top box, DVD player, game console, audio equipment, and light fixture
- Employ ENERGY STAR turnkey consumer education and outreach resources
- Tie into ENERGY STAR national campaign
- Collaborate with EPA on Tier 2 TV spec



# Working with Electronics Retailers



- ENERGY STAR advising retailers on establishing cross-cutting marketing campaign around energy efficiency
- Key TV/Home Theatre partners
  - Wal-Mart
  - Best Buy
  - Amazon.com
  - Sears
- Interested in working with program sponsors
  - Incentives for TVs/home theatre
  - Leveraging ENERGY STAR national promotions
- ENERGY STAR working with CEE on detailed program design/approach recommendations

# Consumer Electronics: DTAs



- U.S. Market
  - Brief one-time sales window around transition to all-digital broadcasting
  - Federal coupon available for \$40 off an eligible DTA
  - 22 M DTAs expected to be sold in response to transition
- ENERGY STAR Specification
  - Effective Jan. 31, 2007
  - On, Sleep, and auto power down
- Expected Situation
  - Limited incremental savings between NTIA coupon and ENERGY STAR
    - NTIA coupon:  $\leq 2W$  sleep; no active
    - ENERGY STAR:  $\leq 1W$  in sleep /  $\leq 8W$  active
  - Most manufacturers will strive for coupon
  - Market transformation = Wal-Mart and Best Buy specify ENERGY STAR
    - Limited role for energy efficiency program sponsors



# Consumer Electronics: Computers



- U.S. Market
  - Federal purchasing requirements mandating ENERGY STAR computers since early 1990s
  - Market responds quickly to meet new specs
  - Limits historical role of energy efficiency programs
- ENERGY STAR Specification
  - Version 4.0 Tier 1 effective on July 20, 2007
    - Idle, Sleep and Off power levels
    - Power supply and power management requirements
    - 67 partners and more than 600 Version 4.0 qualified products to date
  - Tier 2 effective July 1, 2009 (target)
    - Energy Efficiency Performance Assessment



# Estimated Computer Savings



Product Category	Annual Energy Use of Standard New Product (Power Mgmt Not Enabled)	Annual Energy Use of ENERGY STAR Product (Power Mgmt Not Enabled)	Annual Energy Use of ENERGY STAR Product (Power Mgmt Enabled)	Total Annual Savings with ENERGY STAR & Power Mgmt Enabled
Office PC	187 kWh	141 kWh	80 kWh	107 kWh
Office Laptop	44 kWh	37 kWh	20 kWh	24 kWh
Residential PC	224 kWh	172 kWh	103 kWh	121 kWh
Residential Laptop	51 kWh	43 kWh	24 kWh	27 kWh

Note: All energy use and savings figures assume that equipment is turned off at night.

- US has more than 180 million computers in use
- Computer energy use accounts for about 2% of nation's annual electricity consumption

# Opportunities for Computers



- Partner with retailers on negotiated cooperative promotions
- Secure more energy savings through product bundling (home office)
  - Computer, monitor, cordless phone, desk lamp, printer (or other imaging products such as fax, copier, scanner or multi-function unit)
- Employ ENERGY STAR turnkey consumer education and outreach resources, including power management
- Tie into ENERGY STAR national campaign

# Consumer Electronics: STBs



- U.S. Market
  - Approx. 90% of U.S. households subscribed to cable or satellite TV service in 2007
  - STBs available through service provider or retailer
  - Service providers ultimately dictate the energy efficiency of product through software and settings
- ENERGY STAR Specification
  - Draft 3: Jan. 2008
  - Effective date: Dec. 2008 (target)
  - Manufacturer spec uses duty cycle approach to address active
  - Proposed spec elements for service providers:
    - Purchase and deploy qualified STBs
    - Educate customers



# Opportunities for STBs

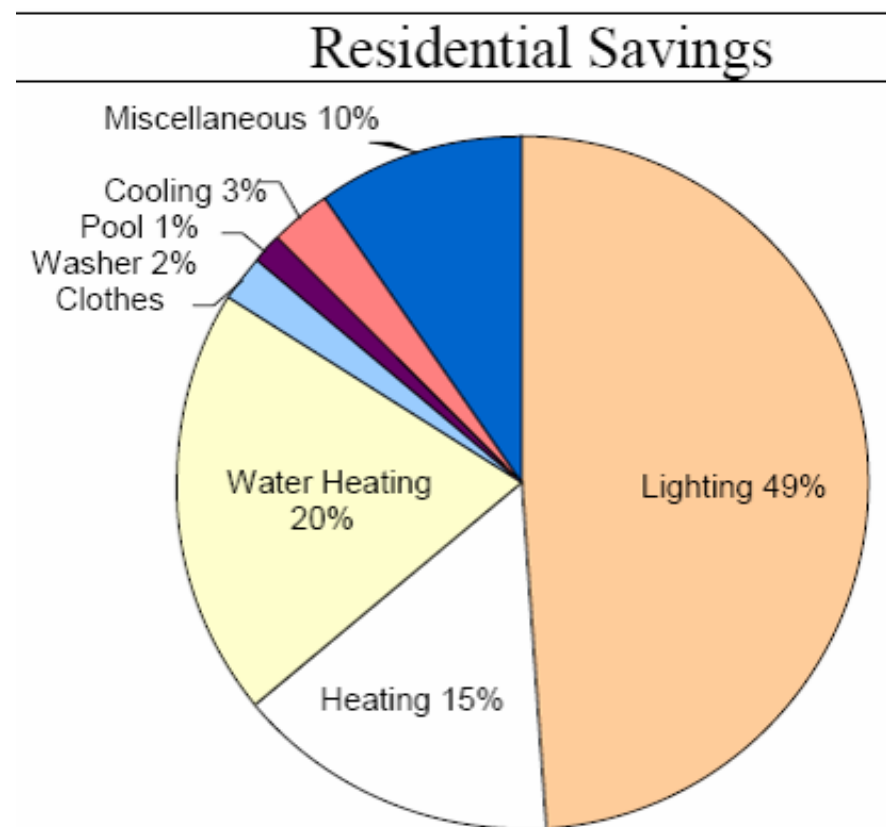


- Negotiate with service providers to improve energy performance of new and legacy boxes
  - Negotiate ENERGY STAR requirements in PUC or local community broadcast license agreements
  - Potential for incentives to service providers
  - Benefits both energy efficiency and greenhouse gas mitigation efforts
- Employ ENERGY STAR turnkey consumer education and outreach resources
- Tie into ENERGY STAR national campaign

# Residential Light Fixtures: Meeting Energy Savings & Cost Effectiveness Goals



- Lighting represents significant achievable energy efficiency in the residential sector







Source: Economically Achievable Energy  
Efficiency Potential in New England



# Residential Light Fixtures: Meeting Energy Savings & Cost Effectiveness Goals



Sample Cost-Effectiveness Measure for Fixtures	 CA IOUs	 Efficiency Vermont	 nationalgrid	 ui The United Illuminating Company
Implementation Period	2002	2002	2001	2002
Lamp Measure Life	9	6	8	9
Fixture Measure Life	20	20	20	15
Incentive Expenditures	\$7,300,000	\$655,147	\$2,200,000	\$635,405
Non-Incentive Expenditures	\$2,100,000	\$944,853	\$1,100,000	\$864,595
Net Annual Energy Savings (MWh)	162,888	11,039	18,037	7,808
Net Annual Demand Savings (kW)	21,365	1,740	5,084	n/a
Levelized Cost Per kWh	\$0.01	\$0.02	\$0.02	\$0.03
Levelized Cost Per kW	\$71	\$149	\$86	n/a

# Residential Light Fixtures: Meeting Energy Savings & Cost Effectiveness Goals



- ENERGY STAR reduces costs
  - Provides a national marketing platform
  - Supplies a network to share resources
  - Offers best practices and other tools
  - Shares data to augment program M&V efforts
- ENERGY STAR fixtures
  - Cost effectiveness similar to CFLs
  - More opportunity to advance market and capture untapped energy savings
  - Tracking the actual number of sockets or the lumen output per fixture might yield more accurate kWh savings results



# Residential Light Fixtures: How the Program Works



- Sets energy efficiency, performance and quality standards



- Increases number of products through recruitment and product development



- Increases sales and stocking by influencing key sales channels



- Drives demand for ENERGY STAR products

# Residential Light Fixtures: Sample Programs



[Seattle, WA area]

- \$150 per ALP installation
- \$500 per home tour with ALP
- \$20 per qualified fixture rebate
- \$1,800 per model home
- \$3 per fixture incentive for showroom staff
- \$3,000 showroom sales challenge



[Dallas, TX]

- \$50 per ALP Installation



[Houston, TX]

- \$50 per ALP Installation



[East Texas]

- \$50 per ALP Installation



[Southern California]

- \$10 per ENERGY STAR fixture that is installed in an interior room using lighting controls



[Wisconsin]

- \$15 per fixture rebate
- \$10 per fixture incentive for showroom staff
- \$30 per fixture rebate for multifamily common area
- \$75 builder incentive for installing 5 fixtures

# Residential Light Fixtures: Sample Programs



[Central Iowa]

- up to \$12 per fixture rebate



[Wisconsin]

- \$20 per qualified torchiere fixture



[Utah, Wyoming, Idaho]

- \$20 per qualified fixture



[Eastern Iowa]

- up to \$12 per fixture rebate



[Southwest Iowa]

- up to \$3 per lamp per qualified T-5/T-8 fixture



[Central Iowa]

- up to \$3 per lamp per qualified T-5/T-8 fixture



[Eastern Iowa]

- up to \$12 per fixture rebate



[Central Iowa]

- up to \$2 per lamp per qualified T-5/T-8 fixture

# Utility Program Fixture Program Highlight: Focus on Energy



**focus on energy**<sup>SM</sup>

*The power is within you.*



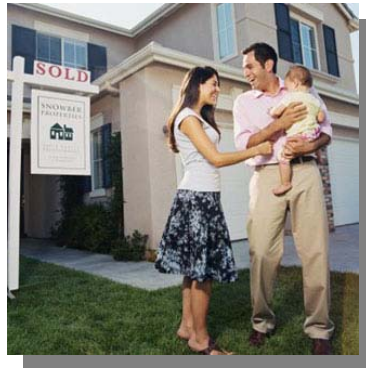
Builder Incentives



**Home Builder**



Fixture rebates



**Consumer**



Fixture rebates



**Multifamily**



SPIFFS for sales staff



**Showroom**



# Utility Program Fixture Program Highlight: Puget Sound Area Utilities & NEEA

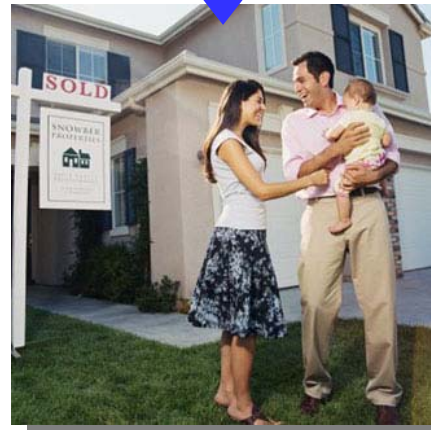


ALP Incentives  
Model Home Incentives



Home Builder

Fixture rebates



Consumer

ALP Incentives  
SPIFFS for Sales Staff  
Sales contests



Showroom Sales Staff

## Utility Program Fixture Program Highlight: BC Hydro Initiatives



- Example: BC Hydro's pilot "Power Smart Lighting Points" fixtures program
  - A "points reward" type program
  - Recognizes contractors, distributors, builders, and showroom sales staff
  - Points earned for
    - Training
    - Actual sales



# Residential Light Fixtures Resources



- Marketing, Sales & Consumer Education
  - National campaign
  - Recruiting
  - Marketing tools, information, and materials and online resources
- Program Design & Implementation
  - Resources for mass markets, new construction, and retrofit program
    - including: fact sheets, program summaries, web catalog, and EPA/contractor support by region
  - Sales Training support in field and online
- Program Evaluation
  - Sales and shipment data reporting in aggregate for use in program planning and evaluation
  - Brand management: Ongoing quality assurance and brand integrity activities
- Recognition – ENERGY STAR Awards
- Network of Partners – Join us!



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THE POWER TO MAKE IT HAPPEN®

# ENERGY STAR National Campaign: Change a Light, Change the World



- Ongoing movement mobilizing energy-efficient lighting market for 8 years
  - Hub connecting campaigns across the country promoting our shared call-to-action
  - Over 1,000 organizations and growing:
    - Governors, mayors, schools, state and local government, retailers, manufacturers, utilities, +
  - Dedicated annual campaign launch day: Change a Light Day: 1st Wednesday every October
    - Use it for events and media outreach!
    - Kicks off in-store promotions
  - Widely covered each October by national and local media
  - You're part of it

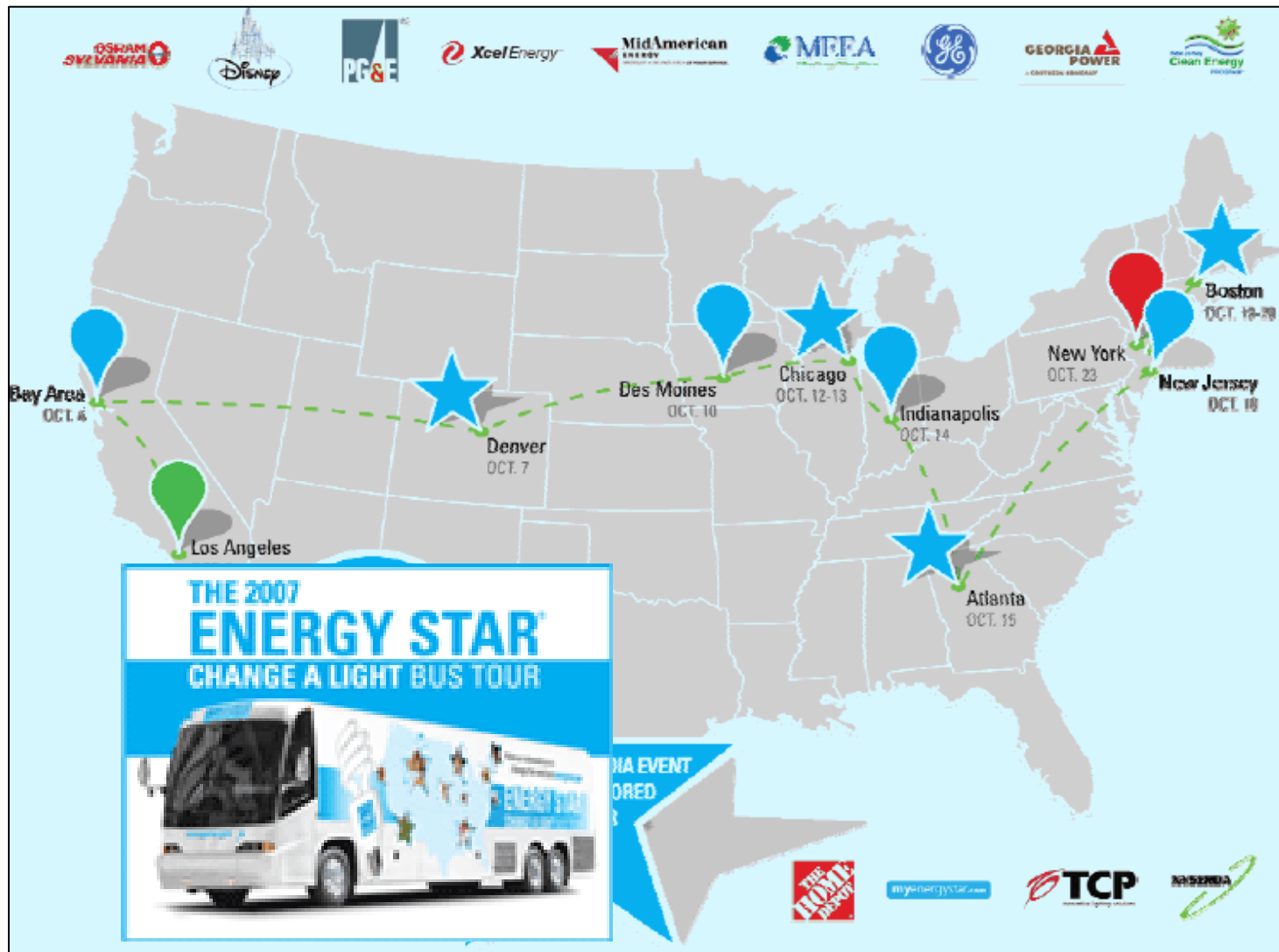


## Change a Light: Record Participation

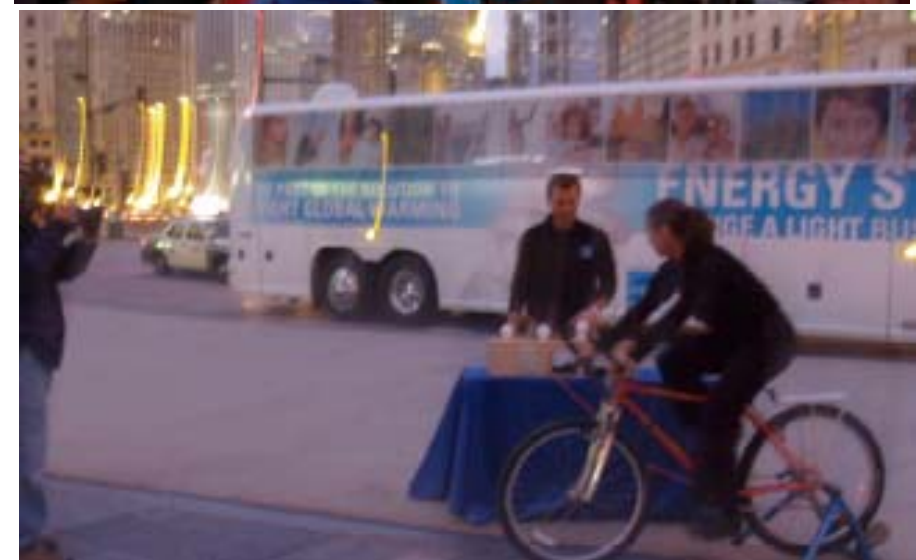


- More than **1.2M pledges** to date to change **4.2M+ lights**
  - Savings from this change are up to:
    - 1.1+ kWh of energy
    - 1.7B+ pounds of greenhouse gas emissions
    - \$110+ million in energy costs
    - And growing every day!
- More than **1,000 organizations** have joined as Pledge Drivers
- Nearly **100,000 people** signed up to receive ENERGY STAR energy-saving tips
- **Millions of media impressions** generated across TV, radio, print, and online in October 2007

# The ENERGY STAR Change a Light Bus Tour: A Movement Sweeping the Nation



# Change a Light Bus Tour in Chicago





# Change a Light Bus Tour Boston



# Change a Light Bus Tour New York City





# Change a Light: Successful Pledge Driver Program



- **Top 5 Pledge Drivers for 2007**
  - Georgia Power (81,903)
  - SCE (47,621)
  - The Commonwealth of VA (18,861)
  - Alabama Power (15,773)
  - NACo (14,580)
  - These 5 pledge drivers responsible for 44% of all pledges!
- **Top 5 Energy Efficiency Program Sponsor Pledge Drivers**
  - Georgia Power Company
  - SCE
  - Alabama Power
  - SRP
  - NYSERDA



# Change a Light Comprehensive Partner Resources



- A marketing/education campaign “in-a-box”
- Online infrastructure with resources – graphics, tools, messaging
- Tools and templates for estimating savings secured by program sponsors
- Network of retailers, manufacturers, advocacy groups
- EPA national media/PR supports local and regional efforts

# 2008: Change a Light and Beyond



- Broader timeframe
  - Earth Day launch
- Expanded pledge / pledge driver opportunities
  - Change a Light or choose an ENERGY STAR TV or enable your power management, etc.
- ENERGY STAR On the Road
  - Series of events linked by common element featuring different products consistent with the season (e.g. computers in September, lighting in October, TVs/home theatre in November, holiday lights in December)
    - Exploring physical manifestation of ENERGY STAR @Home tool as common element
  - Broad range of sponsorship opportunities (including media sponsorship to maximize national exposure)

# Tentative Timeline



- Early February: Request for event proposals out to EEPs and other partners; initiate pledge driver recruitment
- March: lock in media sponsors
- April 22: launch expanded pledge and pledge pages
- May-July: one or more home cooling related events
- Aug/Sept: back-to-school event
- October: lighting event; announce new pledge drivers/pledge goals
- November: consumer electronics for the holiday event
- December: holiday lights event

# Contact Information



- Hewan Tomlinson, US EPA ENERGY STAR Program
  - Phone: (202) 343-9082
  - Email: [tomlinson.hewan@epa.gov](mailto:tomlinson.hewan@epa.gov)