



ENERGY STAR Qualified Lighting In Multi-Family And Related Applications

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ICF International
In Support of ENERGY STAR



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Agenda



- Opportunities for ENERGY STAR Qualified Lighting
- ENERGY STAR Qualified Lighting and Multi-Family housing
- Success Stories
- Related Applications,
- Things to consider and Q&A



OPPORTUNITIES

Opportunities



Alternative Opportunities that offer a
**single sale for multiple fixtures or
lamps of the same type**

- Multi-Family Housing Including Military Housing
- Hospitality (Hotels and Motels)
- Health Care (Nursing Homes and Assisted Living)
- Dormitories – Colleges & Private Schools

Multi-family Market Growth



- The ***Echo Boomers*** are coming. Some **70 million** of them.. they've either been burned or have seen friends get burned in the single-family sub-prime fracas.
- Multi-family developers seem to be returning to the construction market as improvements in rent fundamentals and unit pricing at existing properties begin to pencil out building pro-formas.



Multi-family Market Growth

- Population growth will require new construction of roughly **420,000 incremental multi-family units per year** across the U.S.
- There were 336,000 new multi-family units **started** (in buildings with two or more units) in 2006.
- Interestingly, of the newly constructed inventory, the percent of units in multi-unit buildings that are intended for sale has risen precipitously since 2002 when it was just 20%. As of year-end 2006, it stood at **45%, reflecting the momentum of the condominium market.**





Funding Availability

- \$6.6 billion in federal subsidies for affordable housing.
- U.S. Department of Urban Development
- U.S. Department of Agriculture – rural programs, farm worker housing
- Federal Housing Finance Agreements
- States and Local Governments
- Tax Credits



Multi-Family



WECC



NYSERDA



INTERVALE GREEN

What Else?

9 Stories plus penthouse
38 apartments
4 apartments per floor
1 elevator
Resident superintendent
Laundry Room



Old Tappan



Green Housing



Defining Multi-Family

- **ASHRAE/IES 90.1 Standards for Buildings:** more than three stories above grade and differentiates common areas vs. dwelling units
- **IECC:** less than three stories
- **HUD:** five (5) or more units regardless of stories
- Energy-efficiency programs may have their own definition.

Multi- Family



- There were approximately 18 million multi-family buildings in the United States in 2009
- Over ½ of the multi-family units in the US are over 30 years old thus providing opportunities for upgrades.
- Additionally, there are an estimated 134,000 military housing units





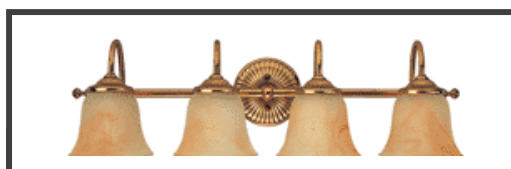
Multi-Family Example

- A simple example:
- Replace one kitchen, one hallway, and one bathroom fixture with ENERGY STAR qualified lighting per dwelling unit in a fifty unit complex.
- 150 units sold.
- 45–260kWh/year savings = \$5 to \$30 per year electrical savings per dwelling

ENERGY STAR Qualified: Kitchen



ENERGY STAR Qualified: Bathroom Vanity Fixtures



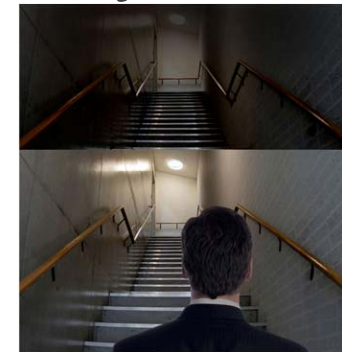
ENERGY STAR Qualified: Hallway/Closet/Utility



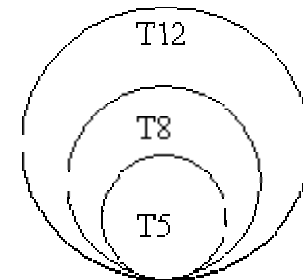
Other Lighting



- Consider bi-level lighting in hallways and stairways



- Consider high performance T8 fluorescent systems in common areas



Other Lighting



- Consider vacancy sensors in meeting rooms, recreation rooms, laundry rooms etc.
- Consider energy-efficient parking lot and garage lighting



Photo Courtesy
Progress Energy

Parking Lot:
LED opportunities?
What about re-design for
appropriate light levels?



Related Applications



Other Growth Areas

- **Hospitality** - 40,000 buildings in 2002, 64,000 in 2009
- **Assisted Living** - 11,459 assisted living facilities (ALFs), as of the beginning of 1998. 2009 – over 36,000 facilities with over 1,000,000 residents.
- **Nursing Homes** grew from 16,100 in 2004 to over 17,000 in 2009
- **Dormitories** – growing need, especially at community colleges.



Bureau Labor Statistics, Assisted Living Federation,
Community College Magazine 2010

Hospitality



- Guest rooms are usually required to meet the commercial energy code for lighting
- Consider ENERGY STAR qualified portable fixtures and or lamps in addition to hard-wired fixtures
- Hallways, stairways, common areas, and parking areas can all benefit from lighting upgrades

Hospitality – The Sheraton



- 1125 guest rooms
- 3 hard-wired and 4 portable per room = 8,575 units for just one hotel
- 1,250 corridor lights
- 200 lights in ballroom
- Conference rooms, laundries, stairways, restaurant?
- Parking garage and outdoor lighting?

Nursing Homes Assisted Living



- Consider ENERGY STAR qualified portable fixtures in addition to hard-wired fixtures – various technologies - seniors need more light.
- Hallways, stairways, common areas, and parking areas can all benefit from lighting upgrades

Nursing Homes Assisted Living



- Combined over 50,000 buildings
- 5 fixtures per dwelling unit X over 1,000,000 occupants = more than 5,000,000 fixtures
- 1% captured for renovation = 50,000 units, plus any corridor, recreation room, or outdoor lighting!!
- What about meeting and laundry rooms?
- Don't forget the lobby



Success Stories

Success Stories



- Massachusetts
- New York State Energy Research & Development Authority (NYSERDA)
- Southern California Edison
- Con Edison
- Austin Energy



Massachusetts



Multi-family New Construction **Pilot** Program

- National Grid and NStar program
- New construction Only
- 28 active recruits (buildings) in process
- 1,762 units
- 1,968,682 square feet

Massachusetts



Requires CFL or Hard-Wired Fixtures

- Walk-through on first two completed projects show an average of three to four ENERGY STAR qualified fixtures, with the balance using CFLs.
- Potential for a least almost 20,000 ENERGY STAR qualified units.

Massachusetts



- Minimum 50% ENERGY STAR in all residential units
- Incentive per CFL based on type ranging from \$2.45 per standard spiral, to \$14.25 for a dimmable flood
- Incentive per ENERGY STAR qualified residential fixture (approx. \$10.50 per fixture)

Massachusetts



- Many of the projects are low income and the program administrators anticipate more hard-wired units in low-income housing based on submitted plans
- ARRA money available to the affordable housing sector is helping to drive the Pilot Program
- Other elements include limited design assistance and other measures such as HVAC

NYSERDA



New Construction and Existing Facilities

- New Construction Program requires ENERGY STAR
- Existing facilities performance based



NYSERDA



Multi-family New Construction **Pilot** Program

- New construction only
- Based on EPA Pilot Program for Multi-Family Housing
- 4 complexes in original pilot
- 4 more complexes since then,
- Many more in the pipeline

NYSERDA



Multi-family New Construction **Pilot** Program

- No screw-in lamps allowed
- 100% pin-based or GU24 hard-wired fixtures
- Most projects affordable housing – allowing for state and city tax credits

NYSERDA



Multi-family Existing Facility Program

- Whole building program
- Performance based: audit and modeling required
- Both fixtures and screw in lamps allowed in modeling

Southern California Edison



Multi-family ENERGY STAR Rebate Program

- Lamps - \$8
- Ceiling Fans - \$20
- Fixtures - \$40
- Vacancy Sensors - \$10
- Other fixtures for common areas - \$20+



Con Edison

Direct Install Program

- One for one replacement in units using CFLs – no cost to tenant
- Similar program for refrigerators
- Other upgrade options available at low cost for common areas

Austin Energy



Green Building - Prescriptive

- **Option A:** 75% of all indoor lamps are ENERGY STAR qualified (1 point).
- **Option B:** 100% of all indoor lamps are ENERGY STAR qualified (2 points).
- **Option C:** 100% of all indoor fixtures are ENERGY STAR (3 points).

Austin Energy



Rebates Available for Multi-family

- **Interior Lighting**
- \$18.00 per kitchen fixture for converting incandescent fixtures to fluorescent.
- \$15.00 per bathroom fixture for converting incandescent fixtures to fluorescent.



Things To Consider

For Manufacturers



- Understand the market actors in your area. Get to know the market actors with ***the most*** potential
- Once a good contact is made, don't forget other ENERGY STAR products and programs that can help the customer
 - Appliances
 - Commercial Kitchen Equipment
 - Benchmarking

For Program Providers



- How are multi-family buildings falling into your energy-efficiency Programs?
- Is ENERGY STAR Lighting part of the Program? Who has responsibility?
- Understand how energy codes relate to buildings in your state, and leverage where possible
- Understand funding opportunities for various building types



Funding Opportunities



- Remember funding opportunities for multi-family housing may exist outside of utility programs to help make the sale:
 - HUD/U.S. Department of Housing and Urban Development (HUD)
 - Municipal or government funding (military)
 - American Recovery and Reinvestment Act of 2009
 - Tax Credits for Affordable Housing



Questions?



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