



U.S. Department of Housing and Urban Development

Transformational Changes to Affordable Housing

EPA Webinar for Local Governments on Energy Efficiency

April 21, 2009

A New Foundation for Sustainability

- **New Focus on Existing Housing**
- **New Pathways to Green**
- **New Emphasis on “Community Based” Strategies**
- **Linkage to Climate Change**



U.S. Department of Housing and Urban Development

Programs

Housing Market and Community Stabilization

- **Neighborhood Stabilization Program**
 - *\$2 billion Competitive Funding*
 - *Energy Factors*
 - *Partnerships*
- **FHA - Energy Efficiency Mortgage**
 - *Limit Increases*
- **Tax Credit Assistance Program**
 - *Competitive grants to Tax Credit projects*
- **Grants in Lieu of LIHTC**

Energy Tax Incentives

- **Qualified Energy Conservation Bonds**
 - *Limit Increase*
 - *Green Communities Programs*
- **Tax Credit Caps for Energy Efficiency and Renewable Systems**
 - *30% of system costs (Renewable)*
 - *\$1,500 on qualified measures*
- **Elimination of Basis Adjustment for Properties Receiving Subsidized Energy Financing**

Affordable Housing

- **PHA Capital Fund –**
 - *\$1 billion Competition*
 - *Energy Retrofit and other priorities*
- **Assisted Housing Stability and Energy and Green Retrofit**
 - *\$250 million (Loans and Grants)*

Low Income Energy Efficiency

- DOE Weatherization Assistance Program
 - *\$ 5 billion*
- Income Eligibility - *200% of poverty rate*
- Funding Levels -
 - *Up to \$6,500/unit (Energy Measures)*
 - *Up to 20% on training and TA*
- Implementation -
 - *State Agency/ Local Agency Providers*

New Community Foundations

- **DOE Energy Efficiency Block Grant**
 - ***\$3.2 billion***
- **Eligible Activities**
 - ***14 activity categories***
- **Energy Efficiency Conservation Strategy**
 - ***Multi sector; Staged Disbursement; \$250,000 for strategy***



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Resources

Energy Efficient Green Building

- **Standards and Guides:**
 - ***ENERGY STAR – Builder Options Packages***
 - ***Enterprise Green Communities -***
www.greencommunitiesonline.org
 - ***Build It Green –***
www.builditgreen.org
 - ***Climate Change ?***

Measures Anyone?

Multifamily Rehabilitation (in addition to measures for Existing Multifamily Housing)			
Measure	Comment	Annual Savings	Simple Payback (Years)
Lighting			
<input type="checkbox"/> T-8 or T5 lamps with electronic ballasts	Electronic Ballasts use 30% less energy, provide better light quality, run cooler and last longer	\$10-\$45	1.5 - 7
<input type="checkbox"/> Metal Halide, High and Low Pressure Sodium Exterior Lamps		\$50	1.4 - 2.8
<input type="checkbox"/> Lighting Control Systems: Occupancy Sensors, Time clock, Photocell	Required for new construction where inefficient lighting is used	\$12	3.0-4.7
Domestic Hot Water			
<input type="checkbox"/> High Efficiency Water Heating System	Gas 40 Gal = 0.61 Electric 40 Gal = 0.93 Gas 60 Gal = 0.57 Electric 50 Gal = 0.92 Gas 80 Gal = 0.53 Electric 80 Gal = 0.89	\$30	13
HVAC			
<input type="checkbox"/> Heating Systems	For Cold Climates: ENERGY STAR qualified gas furnace (90 AFUE); OR ENERGY STAR qualified heat pump; OR ENERGY STAR qualified boiler (85 AFUE); OR ENERGY STAR qualified oil furnace (85 AFUE)		
<input type="checkbox"/> Air Conditioning Systems	For Hot Climates: ENERGY STAR qualified A/C (14 SEER / 11.5 EER); ENERGY STAR qualified heat pump (14 SEER / 11.5 EER / 8.2 HSPF)	\$18-\$20	8.0 -10
<input type="checkbox"/> Seal Duct System (located outside the conditioned space)	- Limit CFM duct leakage to 12% or less of the square footage served by the system (e.g., 1,000 Sq. ft. unit x 12% = 120 CFM allowable leakage) - Insulate ducts to a minimum of R-6.	5%-20%	1.0-3.0
Additional Appliances			
<input type="checkbox"/> ENERGY STAR Dish Washers		\$15	< 1
Shell Sealing			
<input type="checkbox"/> Insulation	Add insulation where needed and feasible to levels prescribed by IECC	\$6-\$8	18-20
<input type="checkbox"/> ENERGY STAR Windows	Savings vary depending on area heating and cooling loads	\$125-\$360	5.0-7.0

Energy Rehab Advisor



ENERGY EFFICIENT REHAB ADVISOR | HOME | ABOUT

WELCOME TO THE ENERGY EFFICIENT REHAB ADVISOR!

This Advisor describes the U.S. Department of Housing and Urban Development's (HUD) guidelines for conducting energy efficient housing rehabilitation. HUD recommends following these guidelines when undertaking any type of renovation project in single family and multifamily housing, whether it is privately-owned or public housing.

The Advisor's energy efficiency recommendations are based on **ENERGY STAR®** specifications, where applicable. ENERGY STAR is the government-backed symbol for energy efficiency.

Incorporating energy efficiency into your rehab project is a significant step toward achieving High Performance Housing — housing that is energy efficient, durable, sustainable and healthy. Click on the following icons to learn about these benefits.

Enter your profile below to **Get Started!** You can also find **general information** on energy efficiency topics, like air sealing and insulation. Please send your comments and suggestions on the Advisor to info@rehabadvisor.com.

ENERGY STAR

Comfort Durability Maintenance Indoor Air Quality Operating Costs Quiet Operation Control Environment Water Use Freezing Problems

BUILD YOUR PROFILE

YOUR BUILDING	YOUR ROLE	YOUR CLIMATE	YOUR BUILDING AGE	SUBMIT
Multifamily <small>Select your building type.</small>	Building Owner <small>Select the term that describes your role in the rehab process.</small>	Northeast <small>Select your climate region. View climate region map.</small>	Pre-1960s <small>Select the decade in which your building was built.</small>	▶



www.rehabadvisor.net

Energy Rehab Advisor

Input: Property Characteristics

Multifamily Building Calculator

This simple calculator will provide representative incremental costs, including labor and materials, and savings that result if you upgrade your rehab project to include selected energy efficiency measures for your size building in your climate region. This calculator is generally more accurate for 5-50 unit buildings of five stories or less, and will not work for buildings above seven stories.

Answer as many questions as you can. The more questions you answer, the more tailored the recommendations will be. If you don't know the answer to a question, leave it blank and the calculator will use average values.

Square footage of building	<input type="text" value="45000"/>
Number of floors	<input type="text" value="5"/>
Number of units	<input type="text" value="50"/>
Climate zone	<input type="text" value="Northeast"/>
Building age	<input type="text" value="Pre-1960s"/>
When was structure last remodeled?	<input type="text" value="Don't Know / Hasn't Been"/>
When was HVAC last replaced?	<input type="text" value="1990s"/>
Heating system type?	<input type="text" value="Gas Furnace (central system)"/>
Cooling system type?	<input type="text" value="Electric Heat Pump (central system)"/>
Domestic hot water type?	<input type="text" value="Central system: Domestic hot water only"/>
Domestic hot water fuel?	<input type="text" value="Electricity"/>

Your energy prices:

Natural gas:	<input type="text" value="1.00"/>	\$/therm
Electricity:	<input type="text" value="0.085"/>	\$/kWh
Heating oil:	<input type="text" value="1.30"/>	\$/gallon

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Energy Rehab Advisor

Output: List of Measures

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Here is an estimate of the incremental increase in construction costs and the resulting bill savings, based on the questions you answered, for selected energy efficiency upgrades during your remodeling project.

Measure	Added Cost	Typical Yearly Savings	Payback
Tune up heating system	\$2,020	\$2,720	0.7 years
Install programmable thermostats	\$5,000	\$3,130	1.6 years
Have a professional seal air leaks	\$4,500	\$2,500	1.8 years
Replace incandescents with fluorescent lighting	\$5,400	\$2,700	2.0 years
Insulate hot water tanks	\$1,800	\$800	2.3 years
Upgrade to ENERGY STAR windows	\$4,650	\$1,290	3.6 years
Replace fluorescent ballasts in common areas	\$7,650	\$1,800	4.2 years
Tune up cooling system	\$2,020	\$400	5.0 years
Insulate exterior walls to at least R-11	\$18,000	\$3,440	5.2 years
Convert laundry to cold rinse	\$3,750	\$550	6.8 years
Seal and insulate HVAC ducts and piping	\$9,000	\$1,250	7.2 years
Upgrade top floor insulation	\$9,000	\$1,130	8.0 years
Install new HVAC controls	\$67,500	\$7,810	8.6 years

This information is provided as a realistic illustration of typical results, and is based on [building characteristics](#) that represent the most numerous multifamily building populations; however, actual figures may vary based on your specific climate, building components, construction type, age, fuel type, etc. Users are strongly encouraged to have an [energy professional](#) conduct a thorough energy audit for precise results.

Multifamily Building Calculator

If you would like to change any of your building inputs and rerun the calculator, you can do so below. The current inputs are those you selected in your previous calculation.

Square footage of building

Number of floors

Number of units

Climate zone

Energy Efficient Green Building

- **Financing Tools & Initiatives:**
 - ***Program Preferences and Threshold Requirements (LIHTC, HOME...)***
 - ***FHA Mortgage Programs/ENERGY STAR Mtg***
 - ***Energy Performance Contracting (PHAs, Local Govt)***
 - ***Emerging Local Government Models (AB 811)***
- **Leveraging:**
 - ***Utility Programs (Local Government Partnerships, Incentives, Low Income)***

Energy Efficient Green Building

- **Procurement:**

- ***Energy Star Purchasing:***
www.quantityquotes.net

- ***Specifications:***

- (1) Proper Installation per Mfg specifications***
- (2) Inspection***
- (3) Testing and Verification***

- **Contractors:**

- ***Licensed and Certified***
- ***ENERGY STAR Home Performance***
BPI Certified

ENERGY STAR Bulk Purchasing



The screenshot shows the ENERGY STAR Bulk Purchasing Request Form interface. At the top left is the ENERGY STAR logo. The main heading is "ENERGY STAR® Bulk Purchasing". Below this is a navigation bar with links for "Home", "About", "SUBMIT A PURCHASE REQUEST" (highlighted), "Purchase Requests", and "Profile". On the right side, it says "Logged in as". The main content area is titled "ENERGY STAR® Bulk Purchasing Request Form". Underneath, it says "Step 1: Choose a product from the list below" and "You can only select one product at a time. You will have the opportunity to request a quote for another product at the end of the process." A list of product categories follows, each with a radio button:

- ENERGY STAR Qualified CFLs
- ENERGY STAR Qualified Refrigerators
- ENERGY STAR Qualified Light Fixtures
- ENERGY STAR Qualified Dehumidifiers
- ENERGY STAR Qualified Room Air Conditioners
- ENERGY STAR Qualified Dishwashers
- ENERGY STAR Qualified Clothes Washers

At the bottom left of the form area is a "Next" button.

www.quantityquotes.net

WEB SITE RECAP

- **HUD Recover Act:**
www.hud.gov/recovery
- **Weatherization:**
www.waptac.org
- **Energy Efficiency Block Grant:**
www.eecbg.energy.gov



U.S. Department of Housing and Urban Development

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