

# HUD's Energy Action Plan And Multifamily Housing



Energy Efficiency and  
Conservation at HUD:  
Implementing the President's  
National Energy Policy

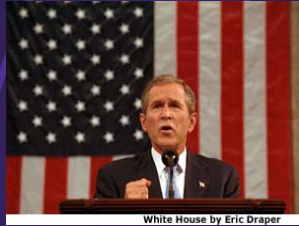
## Rationale: National Energy Policy:



"Conservation and energy efficiency are crucial components of a national energy plan. Greater energy efficiency helps the United States reduce the likelihood of energy shortages, emissions and the volatility of energy prices."

*May 2001*

## Rationale: President George W. Bush:



“...We need to be more **self reliant and self-sufficient**. It is in our nation’s national interest that we develop more energy supplies at home... It is in our **national interest** that we **conserve more**. It is in our national interest that we **modernize** the energy infrastructure of America.”

*October 26, 2001*

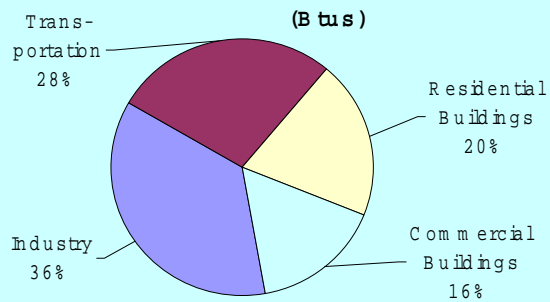
## Rationale: Secretary Mel Martinez

“Improving the energy efficiency of the nation’s housing stock is an important part of our efforts. As one of the largest housing expenses after mortgage payments, the rapid rise of energy costs is making things difficult for both renters and homeowners.”

June 11, 2001



**Buildings account for over one third  
(36%) of all energy used in the U.S.**



## **Energy Use in HUD-assisted properties**

- Americans spend \$131 billion each year on household energy
- HUD spends some \$4 billion each year on energy – almost 15% of entire budget
  - Directly through operating grants or utility allowances
- Almost 5 million HUD-assisted renters and homeowners
  - 5% of all households

## Approximately 5 Million Units

- Public Housing
  - 1.2 million units
  - HOPE VI - 6,000 units/year
- Rental Assistance
  - Section 8 vouchers – 1.8 million units
  - Assisted Multifamily – 1.6 million units
- Homeownership
  - FHA single family mortgages – 1 million/year
    - 10 percent new construction
  - 800 new multifamily mortgages/year – 2.7 million new units

## 5 Million Units – Cont.

- Block Grants – CDBG and HOME
  - 174,000 units rehabbed/each year
  - 13,000 new construction/each year.
- Senior Housing
  - 3,500 Section 202 units – 300,000 units
  - 5,000 units/year
- New construction
  - HOPE VI – approx. 6,000 units/year
  - Senior Housing – 6,000-9,000 units/year
  - CDBG and HOME – 13,000 new units
  - FHA single family – 100,000 new

## **Significant Potential Savings in Public Housing**

- Approximately \$1.1 billion on energy in public housing alone
- Potential savings - \$165 million per year
- \$20 to \$40 per every public housing resident

## **Charge to Task Force from Deputy Secretary Jackson**

- Improve energy efficiency and conservation in HUD-assisted rental housing.
- Expand the use of Energy Efficient Mortgages, consistent with sound underwriting principles.
- Provide technical assistance on energy issues to nonprofits and faith-based organizations.
- Research and development of new energy efficient technologies.

## Barriers to Energy Efficiency at HUD

- Lack of strong incentives to conserve
- Declining technical expertise in field
- Lower property standards than most states - 1992 Model Energy Code
- Lack systems for tracking progress, setting benchmarks on energy efficiency
- Split incentives in rental housing

## Current Incentives for Energy Efficiency

- **Public Housing**
  - Retention of Savings
  - “Rate Reduction” Incentive
  - “Frozen Base” Incentive
  - “Additional Subsidy” Incentive
- **FHA**
  - Energy Efficient Mortgages (EEMs)
  - Energy Efficient Homes (EEHs)
  - Weatherization mortgage insurance
- **Section 202 and 811**
  - Energy Efficient Construction

## **21 Actions in Six Key Areas:**

- *Implement Energy Star, weatherization partnerships*
- *Information, training and technical assistance*
- *Strengthen Rewards and incentives*
- *Strengthen energy standards and program requirements*
- *Improve management and monitoring of HUD's energy programs*
- *Conduct policy analysis and technology research*

### **I. Implement Partnerships with DOE and EPA**

*Establish partnerships with DOE and EPA: Energy Star and weatherization assistance*



## **II. Provide information, training and technical assistance**

*Provide better information and training to HUD's customers and clients in a cost-effective and coordinated manner.*



## **III. Strengthen Rewards and Incentives**

*Strengthen rewards and incentives to HUD customers and clients to reduce energy costs in their buildings*





## **IV. Strengthen energy standards and program requirements**

*Strengthen HUD's current energy efficiency standards and improve compliance with program regulations.*



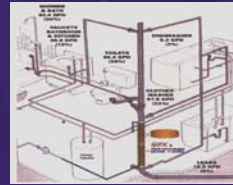
## **IV. Strengthen energy standards and program requirements**

*Strengthen HUD's current energy efficiency standards and improve compliance with program regulations.*



## **V. Improve energy program management and monitoring**

*Better coordinate, organize and staff HUD's energy programs, and improve tracking and monitoring of energy use*



## **VI. Technology development (as needed) and policy analysis**

*Undertake additional policy analysis and, where needed, research and development of energy efficiency technologies.*



## Multifamily Action 1: Promote Energy Star

- Memorandum of Understanding between HUD, EPA, DOE
- September, 2001
- Will expand purchasing of Energy Star in all HUD-assisted, financed insured buildings.



## Energy Star Actions

- Several Actions
  - Bulk purchasing of Energy Star products
  - Energy Star logo on HUD web Site
  - Energy Star Toolkit to HUD customers and partners
  - Energy Star compliant rehabilitation guidelines

## **Multifamily Action 2: Expand DOE-HUD Weatherization Partnerships**

- Expand use of weatherization funds in HUD-assisted multifamily properties to 5 states
  - Modeled on NY experience
  - Link weatherization dollars with HUD funds
  - Coordinate weatherization/lead hazard control
- Major Items:
  - Installation of energy management systems
  - Installation of efficient motors
  - Appliance replacement
  - High efficiency lighting
  - Insulation, duct sealing, weatherstripping.
  - Submetering
  - Efficient windows

## **Assisted Housing Best Practice – New York State**

- Bay Towers:
  - Weatherization Workshop
  - \$300,000 Weatherization Grant
  - Matched by \$491,000 from replacement reserve
  - NY Multifamily Hub – DHCR - NYSERDA
- Year One ECMs
  - Installation of CO detectors
  - Replace existing boiler and burner
  - Repair hydronic and DHW Leaks
  - Apartment lighting retrofit
  - Window replacement
- Other NY projects
  - NYSERDA loans provide gap financing

## **Assisted Housing Best Practices Boston – Oklahoma City**

- Washington Heights - Boston
  - Conversion from all-electric
    - Built in 1970s with single utility meter
    - Converted 60% of baseboard heating and all hot water from electric to gas – cogeneration
    - Financed through tax credits, gas company grant, project funds
    - 31% reduction in utility bills
- Ardmore Village IV – Oklahoma City
  - \$4,000/unit for geothermal heating and cooling
  - 3-5 year payback

## **Multifamily Action 3: Assisted Housing: Training for Building Managers**

- Focus on better facility maintenance and management
  - Effective no-cost/low-cost techniques
  - New York Model - Steve Winter Associates
  - NYS Department of Community Renewal
  - 15-20% savings
- On-site training of building managers, supers, maintenance staff

### **Multifamily Action 4: Public Housing: Streamline Performance Contracting**

- Performance contracting underutilized
  - Major tool for larger housing authorities (util bills of \$200,000 or more)
- Centralize review of energy performance contracts
  - Ensure consistent interpretation of program regulations
  - Improve quality control
  - Enable sharing of model and best practices
  - Other measures to streamline

### **Public Housing Energy Incentives**

- Frozen base
  - Allows a housing authority use private financing to implemnt a performance contract
- Additional subsidy
  - Allows an additional operating subsidy to amortize the cost of projects financed through a loan
- Rate reduction incentive
  - Permits housing authorities to share utility savings with HUD as a result of alternative purchasing arrangements.

## **Public Housing Energy Incentives**

- HUD's Performance Funding System
  - Allows housing authorities to retain 225% of the first year savings spread over 4 years
- Three additional incentives
  - Provided additional means and motivation for housing authorities to implement conservation projects and reduce utility costs

## **Public Housing Best Practice Portsmouth NH**

- 140 buildings – 887 units – 851,047 Square feet
- Energy Concerns
  - Overheating and minimal control of heating and distribution
  - High water consumption and aging fixtures
  - Significant infiltration and building envelope loss
  - Ductwork and IAQ Concerns
  - Energy Awareness and resident involvement

## Public Housing Best Practice Portsmouth NH

- Total Project Costs – \$3,575,122
  - Capital Funds - \$1.6 million
  - Financed portion - \$1.95 million
  - Annual Debt payment
    - \$236,410 – 12 years
    - \$445,587 – Capital Funds – 4 years
- Savings \$2.8 million over 12 years
  - Annual Guaranteed Savings - \$208,047
  - Annual Predicted Savings - \$234,061

## Public Housing Best Practice Portsmouth ECMs

- Heating and DHW System upgrades
  - Install primary/secondary loop – 13 boiler rooms
  - Upgrade DHW distribution loop
  - Install Boiler system controls
- Mechanical upgrades
  - Replace rooftop AHUs
  - Replace central furnaces
  - Reconfigure filter/air intakes
  - Install AC
- Water Conservation measures
  - Upgrade/replace existing fixtures
- Building Envelope
  - Air seal attic space, duct sealing, cellulose insulation



**Multifamily Action 5:**  
**Award priority rating points in competitive grant programs**

- HUD will provide extra points for energy efficiency in competitive grant awards
  - “SuperNOFA”
  - Elderly – Disabled Housing
    - Senior Housing – Mt Zion Elderly Apts,
      - Retained 75% of costs savings to build to standards that exceed 1992 model energy code: High efficiency individual heating and cooling units
  - HOPE VI

**Multifamily Action 6:**  
**Establish HOPE VI as an Energy Efficiency Leader**

- Require that HOPE VI new construction meets Energy Star
  - Identify techniques for achieving energy Star within Total Development Cost limits
- **Study: Do cost limits preclude the use of ENERGY STAR measures?**
  - Do other regulations and statutory requirements help or hinder efficient home construction?
  - What feasible and practical policy solutions as well as regulatory changes may be needed to address impediments?

## Public Housing Best Practice: Holyoke MA HOPE VI

- 50 new wood framed dwelling units
- 12 multi family units in 4, 3-story buildings, of three units each.
- Achieved Energy Star
  - OVE advanced framing
  - High efficiency boilers/DHW combinations
  - Controlled ventilation



## Other HOPE VI projects

- New Jersey
  - Elizabeth
  - Newark
  - Patterson
- Boston
  - Maverick Gardens
- Tacoma Washington
  - Salishan
- Miami, Gary, Seattle

## **Multifamily Action 7: Technology development and policy analysis**

- Action:** Conduct energy-related policy analysis and research
- Action:** Research, test and demonstrate innovative technologies
- Action:** Promote the use of Combined Heat and Power (CHP)
- Action:** Develop integrated approaches to energy and environmental retrofits

## **Current or Proposed PD&R Studies**

- Study of Energy Star in HOPE VI projects
- Revised, web-based HUD Energy Efficient Rehab Guidelines
- Study of mortgage markets and energy efficiency (Fannie and Freddie)
- Alternative model for calculating utility allowances
- PATH Demonstrations and Field Tests

**Multifamily Action 8:**  
**PATH Demonstrations and Field Tests**

- Support multifamily energy efficiency demonstrations and field tests.
- Takoma Village, Washington DC Geothermal Heating and Cooling
  - OVE Engineering
  - Solar Domestic Hot Water
  - Energy Star labeled

***Provide information, training and technical assistance***

- Action:** Coordinate department-wide workshops and standardize information
- Action:** Encourage greater energy efficiency through CDBG and HOME
- Action:** Work with HUD's Center for Faith-Based and Community initiatives to assist non-profits and faith-based organizations

## ***Strengthen Rewards and Incentives***

**Action:** Feature Energy Efficient Mortgage as a priority loan product.

**Action:** Simplify regulatory requirements for Energy-Efficient Mortgages

## ***Improve energy management and monitoring***

**Action:** Assign agency-wide responsibility for coordinating HUD's energy programs

**Action:** Include energy efficiency performance measures in Annual Performance Plan

**Action:** Improve tracking and monitoring of energy use in public & assisted housing

**Action:** Improve tracking and evaluate the performance of Energy-Efficient mortgages

## Next Steps

*Dep. Sec. approved Action Plan 4/29/01*



- Complete implementation plan
  - Two-year time horizon
  - Coordinated by Task Force
- Agreements with DOE and EPA
- Release Action Plan to public
- Implement organizational changes