



# Morgan Marketing Partners

## **Minimum Energy Efficiency Standards for Rental Properties**

**By George Phillips, Senior Consultant with Morgan Marketing Partners**

**February 2009**

The Iowa Association of Municipal Utilities asked Morgan Marketing Partners (MMP) to develop minimum energy efficiency standards for rental properties. These standards would be offered to Association Member utilities to be included in municipal ordinances. The objectives of the minimum energy efficiency standards are to reduce consumers' energy bills, lower the total cost of housing and help achieve the utility's energy reduction goals without having a negative impact on landlords.

These standards were based on research of similar standards in other cities and states across the country and extensive knowledge of energy efficiency practices in residential homes. In creating the standards consideration was given to the lack of current standards, the customer segment living in the rental units to which the standards would be targeted, the desire to have lower utility bills across the entire segment and the goal to reduce overall energy use within the municipal, all without disrupting the economic and financial status of the landlord/tenant relationship.

It is recommended that the minimum energy efficiency standards be implemented in such a manner to cause rental housing to become more energy efficient. These standards would go into effect immediately for all rental properties and over a short period of time these minimum standards would be met. Total housing cost reduction for low income and working poor and reduced energy use are the ultimate goals.

The recommended minimum energy efficiency standards for rental properties can be found on page 5 of this report.

Many cities have or are considering minimum residential energy efficiency standards. Most would be enforced by having the home inspected for energy efficiency when the property is sold and requires the needed upgrades as a condition of sale. Few have rental energy efficiency standards for existing dwellings that are not being sold.

All of the existing Residential Energy Conservation Ordinance (RECO) programs include rental housing. In Burlington, VT, Ann Arbor, MI, and the State of Wisconsin, programs apply only to rental properties. In Burlington and Ann Arbor, RECO programs only apply specifically to rental housing units where tenants are directly paying electric bills; if the landlord pays utility bills, or if the property is owner-occupied, those properties are exempt from the RECO. In other cities where owner-occupied housing is included in the RECO, certain properties are exempt. Examples include properties

constructed after a certain date—perhaps when the city's energy conservation standards for new buildings took effect, any mobile homes, and live/work occupancies. Usually if a building has participated in another energy conservation program, they are also exempt.

Only one city implemented RECO in conjunction with periodic safety inspections—Ann Arbor. Every 2-3 years when landlords are required to perform a safety inspection, the inspectors also check the energy efficiency features of the rental property. Other cities have been reluctant to incorporate RECO with safety inspections because the inspectors need to be trained on energy efficiency as well as the standard safety features.

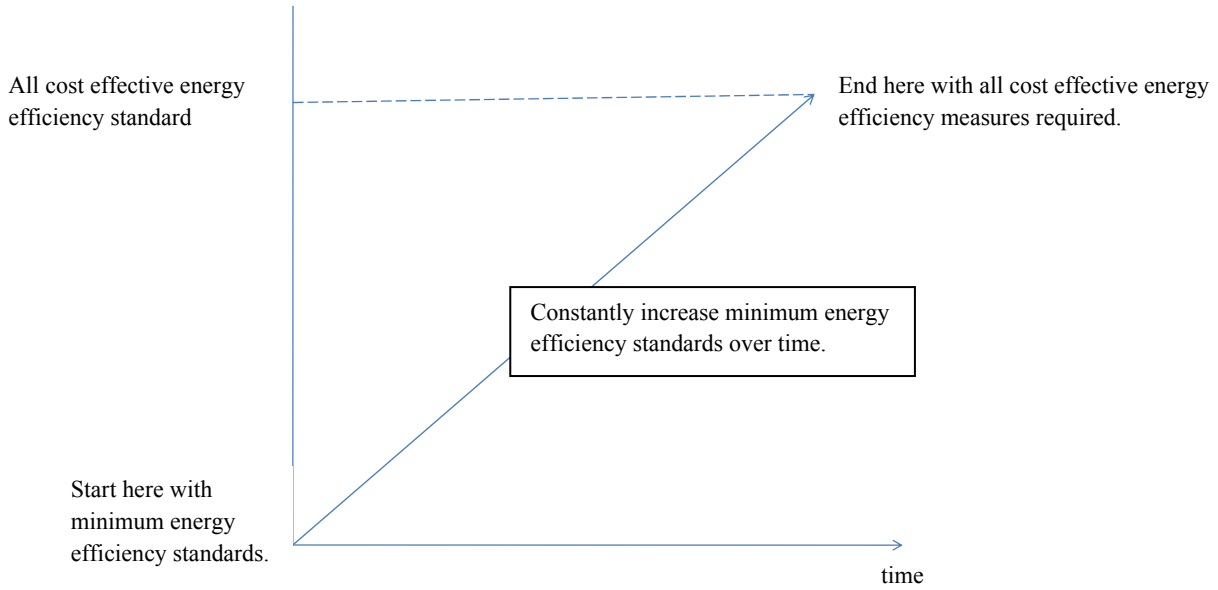
On Thursday, February 12, 2009, Memphis passed an ordinance requiring minimum energy efficiency standards for rental units. Inspection can be the result of a renter's complaint or high energy usage reported by the municipal utility. This may be the first city to pass an ordinance whose energy efficiency inspection can be requested by the tenant or utility. The Memphis ordinance is attached.

Minimum energy efficiency standards are not targeted at newer, mid and upper end rental properties, since they most likely already meet these standards. The standards target low income and working poor rental units. These are the units that are occupied by those most challenged to pay high utility bills and who have little ability to make changes that would lower their total cost of housing. Their housing costs are primarily made up of rent and utility bills. The tenant has little opportunity to make significant changes that would reduce their utility bill since they don't own the property and won't make energy efficiency improvement investments, and the landlord has little motivation to make changes that would reduce the utility bill since they don't pay the bills. All parties realize that some changes could be made that, even if the energy efficiency improvement investments are rolled into the monthly rent, the tenant would still have a lower total cost of housing since the higher rent would be more than offset by the lower utility bills. This was contemplated in proposed Iowa legislation at the end of this report. Landlords are reluctant to make changes for fear they will not be able to recoup their investment as they must compete for tenants by keeping the rental rates low. However, if all property owners were treated on an equal footing in a community, the competitive playing field would remain level. Landlords would recover their investments, tenants would have lower total cost of housing and the utility would move toward achieving their energy saving goals.

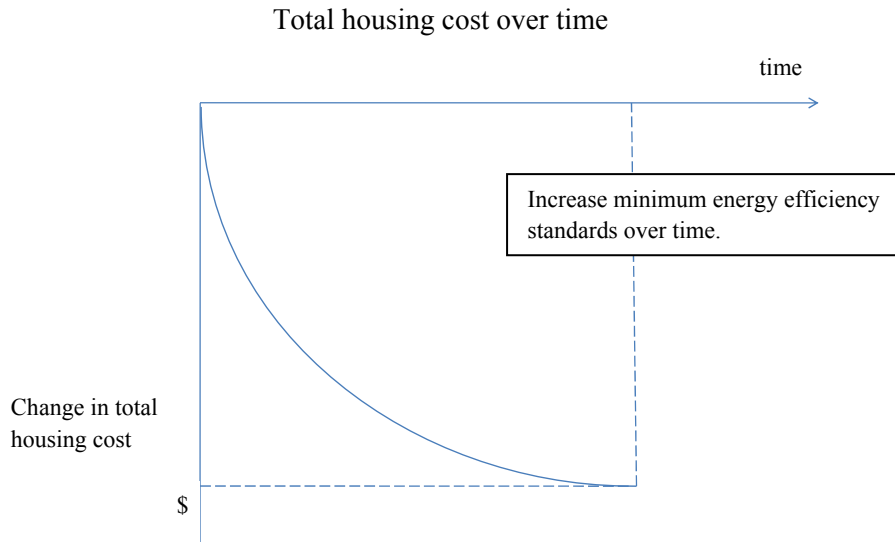
Implementing minimum energy efficiency standard for all rental properties at the same time is fair and equitable. Most energy efficiency standards have been implemented only when the property is sold, creating inequities between properties that are sold and those that have not been sold. By establishing a minimum energy efficiency standard for all rental properties at the same time, energy saving will be achieved quicker for the utilities and more tenants will benefit sooner.

Once energy savings and lower total housing costs have been achieved by these initial minimum energy efficiency standards, additional study could reveal how more stringent standards could lower total housing costs even further and continue to help achieve the utility's energy reduction goals without impacting landlord profits.

The illustration below show how initial energy efficiency standards can lead to taking full advantage of all cost effective measures in the future.



The economic impact of higher energy efficiency standards on total housing cost (rent plus utility bills) should be carefully studied. The minimum standard should continue to be raised until total housing costs no longer go down.



Although not part of the analysis, it should also be noted that all reductions in energy means more of the energy dollars saved will stay in the community, having a positive economic impact on the community.

# Proposed Minimum Energy Efficiency Standards for Rental Properties

These minimum standards are designed to be cost effective for the landlord and tenant. Any investments in these energy efficiency standards would be covered by increases in the rent rate. The increased rent would be more than offset by reduced energy bills. The standards are designed to be easy for landlords to implement and easy for authorities to inspect. These initial minimum standards will be the basis for future improvements. These standards will help cities meet their energy reduction goals, create a positive economic impact by keeping dollars from reduced energy purchases in the community and lower tenant total housing costs. The impact of landlords will be minimal in that all rental properties will be treated the same and investments made for improvements can be recovered in higher rental rates.

Note: Minimum Standards used by IAMU in the model ordinance do not follow verbatim the suggested standards set below by Consultant George Phillips.

## Minimum Energy Efficiency Standards for Rental Properties

### Safety

- Must have smoke and CO detectors
- All electric and gas equipment must be operable
- All must have proper switches, proper gas piping and safe wiring

### Building envelope

- Windows (includes basement windows)
  - No windows with part of the pane missing
  - All window cracks must be taped with long lasting window tape
  - Must be able to close and latch/lock all windows
  - All windows must be well fit and properly sealed
- Exterior Doors (includes door to garage)
  - Doors must be insulated or have a storm door
  - Doors must fit frame with no visible cracks between door and jam
  - Doors must be properly sealed
  - No more than 1/16 inch showing below door
  - Must be able to close and latch doors
- Exterior walls, ceiling and floor over crawl space (walls to attached garage are considered exterior)
  - No holes or cracks in exterior walls, ceilings or floors
  - All pipe and wire opening must be caulked and sealed
  - All openings to crawl space and attic must be insulated and closed with a tight fit
- Insulation
  - Attic must have cavity filled throughout

- Room Air Conditioner
  - No visible light between air conditioner and opening

#### Heating and cooling

- Thermostat
  - Must be operable
- Furnace
  - Must have had professional maintenance within past year of move-in
  - Maintenance must include tune-up with certification of efficiency rating and functioning as originally designed
  - Furnace filter must be clean at move-in
- Heating duct system
  - All duct work in unconditioned space must be sealed and insulated at R-4
- Water heater
  - Must be in conditioned space

#### Plumbing

- Faucets
  - Must not leak
  - Must have aerators in kitchen faucet
- Showers
  - All must have low flow shower heads (less than 3.0 gpm)
- Toilets
  - Must not leak

#### Appliances and lighting

- Refrigerator
  - Not more than 20 years old
  - No second refrigerator or freezer
- Cooking
  - Rental unit must have microwave or toaster oven
- Lighting
  - At least 3 CFLs must be placed in sockets that are used most often

## Attachments

**Other cities and state with minimum energy efficiency standards for rental properties are listed here. Methods of implementation vary.**

### **Memphis, Tennessee**

Memphis passed an ordinance requiring the implementation of minimum energy efficiency standards for rental properties. This ordinance was passed February 12, 2009. See the following web site.

[http://www.cityofmemphis.org/pdf\\_forms/energy\\_efficiency\\_rental\\_properties\\_ordinance.pdf](http://www.cityofmemphis.org/pdf_forms/energy_efficiency_rental_properties_ordinance.pdf)

### **AN ORDINANCE TO PROVIDE FOR MINIMUM ENERGY EFFICIENCY IN RENTAL PROPERTY**

**WHEREAS**, the State of Tennessee has the nation's highest average electricity use per household, with the City of Memphis mirroring state data. This status can be attributed to several factors, including: substandard housing stock, outdated residential energy codes, limited inspection/enforcement of existing energy codes, historically low cost energy, a relatively stable supply of electricity, lack of consumer education and few incentives to encourage energy efficiency; and

**WHEREAS**, the City of Memphis has a comparatively high level of residents living at or below the poverty level. Many of these residents live in rental housing. With recent increases in energy costs across the nation, residents are struggling to pay for utilities that now take a much larger portion of their limited incomes; and

**WHEREAS**, some of these residents have found themselves in the difficult situation of having unnecessarily high utility bills due to the condition of the housing or heating and cooling equipment. In many instances, utility customers residing in large but well insulated and sealed homes with efficient equipment have lower utility bills than much smaller rental property with deficiencies in building envelope or equipment efficiency; and

**WHEREAS**, these residents are, in many cases, unable to move to better housing stock, are also unable to get their landlords to improve their living environment and are unaware of other available remedies. While extremely high utility usage can come during very cold or very hot weather, it is most important to consider heating equipment which, when not up-to-date or properly maintained, is not only a high energy user, but potentially a threat to safety and health; and

**WHEREAS**, it is neither intended nor is the City of Memphis empowered to modify the respective obligations placed upon landlords and tenants under the Uniform Residential Landlord and Tenant Act, Tenn. Code Ann. Section 66-28-101, *et seq.*; and

**WHEREAS**, it is expected that inspections will be conducted primarily on a complaint basis and excessive utility consumption will be a factor in identifying other units for inspection. Excessive utility consumption is defined as a unit consuming the highest ten percent of utilities per square foot for units of similar vintage, construction and size. Occupancy of units is a factor to be taken into consideration to determine if the utility consumption is excessive. In all cases inspectors should have an objective basis for initiating the inspection, which reason should be documented.

**WHEREAS**, MLGW's programs to assist customers in using less energy focus on educating and demonstrating responsible behavior to conserve energy in conjunction with facilitating home energy-

related repairs and improvements. While the education and demonstration aspects serve renters well, improvements and repairs are mostly applicable to owner occupied units.

**SECTION 1. NOW, THEREFORE, BE IT ORDAINED BY THE COUNCIL OF THE CITY OF MEMPHIS,** That Chapter 48, Section 48-2 of the Memphis Housing Code is hereby amended by adding the definition of “residential rental unit” as follows:

“Residential rental unit” means a rented or leased single-family residential building or a rented or leased residential dwelling unit within a single-family or multiresidential building.

**SECTION 2. BE IT FURTHER ORDAINED,** That Chapter 48 of the Memphis Housing Code is amended by adding a new Section 48-133 as follows:

Sec. 48-133 Energy Efficiency in Residential Rental Units

Each residential rental unit shall have:

(a) Envelope: Windows properly glazed, no holes in outside walls, all building penetrations with pipes or wires sealed from the outside, a serviceable roof, insulation in good condition completely filling the area between the ceiling joists of the topmost floor in areas without attic flooring, and all exterior windows, exterior doors, and attic access properly sealed with weather stripping to form an air tight barrier between conditioned and un-conditioned spaces. Confined spaces such as areas under attic flooring or enclosed ceiling vaults will not be subject to this insulation standard. This section shall not apply when the landlord pays the electric or natural gas bills.

(b) Heating and Cooling: A heating and cooling (if applicable and Landlord provided the equipment) unit that is properly installed, vented, and functional as originally designed. If there are ducts in unconditioned accessible space, the ducts must be connected at all junctions, must not be crushed, must have no significant leaks, and must be insulated. There must be a working thermostat. If there are room air conditioners, the units must be properly installed and, during heating periods, should either be removed or properly covered and sealed to prevent heat loss. This section shall not apply when the landlord pays the electric or natural gas bills.

(c) Plumbing: A plumbing system free from material leaks in piping, water closets, hose bibs, faucets, water heaters and all other fixtures, except when landlord pays the water and hot water bills.

(d) Existing equipment shall function according to the manufactured standards at the time of production. However, as worn out equipment is replaced, equipment with the prevailing minimum energy efficiency level as defined by federally mandated manufacturing standards shall be installed. As deficiencies in envelope, heating and cooling, and plumbing are corrected, those corrections shall meet the minimum standards of prevailing energy code (i.e. duct sealing, insulation levels, etc.).

**SECTION 3. BE IT FURTHER ORDAINED,** That Chapter 48, Section 48-7 of the Memphis Housing Code is hereby amended by adding a new subsection 48-7 D. as follows:



D. The Board of Memphis Light, Gas and Water may designate certain employees of Memphis Light, Gas and Water to make or cause to be made inspections to determine the conditions of residential rental units to safeguard the safety, health and welfare of the public under the provisions of Sections 48-1 through 48-23 of the housing code. Pursuant to TCA 7-63-101 et seq., the Board of Memphis Light, Gas and Water, may designate these employees to become special officers, for the purpose of issuance of citations in lieu of arrest of offenders in cases where they have jurisdiction. The designated Memphis Light, Gas and Water employees are authorized to enter any residential rental unit at any reasonable time for the purpose of performing his or her duties under Sections 48-1 through 48-23 of the housing code. The designated Memphis Light Gas and Water employees shall have all powers conferred by Sec. 48-23 of the housing code.

The Board of Memphis Light, Gas and Water shall establish a schedule of fees that Memphis Light, Gas and Water shall charge and receive from the owner of any property which is inspected by Memphis Light, Gas and Water employees pursuant to this chapter. The fee shall not exceed \$25 per unit actually inspected nor shall any single unit be charged more than one fee per calendar year. No fee shall be assessed against the owner of the unit unless the owner is found to be in violation of this section.

When an inspection is to be conducted due to suspected excessive utility consumption the owner of record will be notified of the inspection at least five (5) calendar days in advance via U.S. Mail. Excessive utility consumption is defined as a unit consuming the highest ten percent of utilities per square foot for units of similar vintage, construction and size.

**SECTION 4. BE IT FURTHER ORDAINED,** That the provisions of this Ordinance are hereby declared severable, and if any of the provisions shall be unconstitutional or invalid, the remainder shall continue in full force and effect, it being the Council's intent now hereby declared that this Ordinance should have been adopted even if such unconstitutional or invalid matter had not been included therein.

**SECTION 5. . BE IT FURTHER ORDAINED,** That this Ordinance shall take effect from and after the date it shall have been passed by the Council, signed by the Chairmen of the Council, certified and delivered to the Office of the Mayor of Memphis in writing by the Comptroller, and become effective as otherwise provided by law.

Chairman of Council  
Attest:  
Comptroller

## Wisconsin

Wisconsin has standards that must be met for rental ownership transfer.

Wisconsin Weatherization Field Inspection Report SBD-7313-E. This is a pretty good form and easy to fill out. The complete form can be found at this web site.

<http://www.commerce.state.wi.us/SB/SB-DivForms.html#rental>

### **NOTE: Submit one report per building!**

If OK, check these boxes



If not OK, check the appropriate boxes for the improvement(s) needed.

1.  **Doors:**  Needs insulated doors or storm doors,  Needs double-glazing or storms on side lites,  Needs self-closing devices on storm doors.
2.  **Windows:**  Needs double-glazing or storm windows (including basement), Window Repairs:  Putty,  Glass,  Frame.
3.  **Caulking or Glazing Compound:** Needs caulking→ Storm window glazing and storm door frames.
4.  **Weatherstripping:**  Needs weatherstripping on cracks larger than 0.1" at → Windows,  Exterior Doors
5.  **Blower door test**—Submit documentation per Comm 67.05 (3).  Not applicable.
6.  **Box Sill:** Existing R-value = \_\_\_\_\_  Not accessible,  Add R-19,  Add R-11
7.  **Forced air supply ducts in vented spaces:**  not applicable,  Not accessible,  Add R-5
8.  **Steam heating pipes in vented space:**  Not applicable,  Not accessible,  Add R-4
9.  **Hydronic heating pipes in vented space:**  Not applicable,  Not accessible,  Add R-2
10.  **Domestic water pipes in vented space:**  Add R-2 (hot and cold)→  Within 5 feet of water heater,  Entire length (circulating).  Not applicable
11.  **Shower flow restrictors:**  No shower facilities,  Add restrictors→ 3 GPM max.
12.  **Access panels and doors to attics and other vented spaces:**  Not applicable,  Add R-19 if horizontal,  Add R-5 if vertical.
13.  **Attic insulation:** Existing R-value = \_\_\_\_\_  Not accessible,  Insulate to R-38,  Add R-19  
 Add to maximum allowable level (floored attic).
14.  **Moisture control:** Attic→ Not accessible,  Vent needed = \_\_\_\_\_ Sq. Ft., (Existing vent area: High: \_\_\_\_\_ Sq. Ft., Low: \_\_\_\_\_ Sq. Ft.)  
Crawl space: → Not accessible/applicable, Existing vent area = \_\_\_\_\_ Sq. Ft.,  Vent needed: \_\_\_\_\_ Sq. Ft.,  Need crawl space vapor barrier.

The following are the residential Energy Efficiency Standards for Wisconsin. Visit this web site for the entire code. <http://www.legis.state.wi.us/rsb/code/comm/comm067.pdf>

**Table 67.11-1  
Insulation of Attics and Access Panels Or Doors**

	<b>If insulation of an R-Value less than or equal to R-5 is present</b>	<b>If insulation of an R-Value greater than R-5, but less than or equal to R-10 is present</b>	<b>If insulation of an R-Value greater than R-10, but less than R-19 is present</b>	<b>If insulation of an R-Value of R-19 or greater is present</b>
Attics (a) (b) (c)	Insulation shall be added to bring the total insulation level to R-38	Insulation shall be added to bring the total insulation level to R-38	R-19 insulation shall be added to the existing insulation	No additional insulation is required
Horizontal Access Panels or Doors to Attics or Other Vented Spaces	Insulation shall be added to bring the total insulation level to R-19	Insulation shall be added to bring the total insulation level to R-19	Insulation shall be added to bring the total insulation level to R-19	No additional insulation is required
Vertical Access Panels or Doors to Attics or Other Vented Spaces	Insulation shall be added to bring the total insulation level to R-5	No additional insulation is required	No additional insulation is required	No additional insulation is required

(a) Wall and ceiling cavities open to the attic area shall be insulated.

(b) If knob and tube wiring is present, insulation shall be installed in such a way as not to cause a hazard. The owner may wish to consult the municipal inspector or an insulation contractor for the correct insulation procedure.

(c) If floor boards are present, insulation shall be installed over the floor boards to the required R-value or the cavities below the floor boards shall be completely filled with insulation.

**Table 67.11-2  
Insulation of Box Sills**

	<b>If insulation of an R-Value less than or equal to R-2.5 is present</b>	<b>If insulation of an R-Value greater than R-2.5, but less than or equal to R-10 is present</b>	<b>If Insulation of an R-Value greater than R-10 is present</b>

Box Sills(a) (b)	Insulation shall be added to bring the total insulation level to R-19	R-11 insulation shall be added to the existing insulation	No additional insulation is required
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(a) Box sills that separate the rental unit from a garage which is unvented or is vented with outside air shall be insulated, if accessible.

(b) Foam plastic insulation may be used in the box sill of the basement or ground floor, above the bottom of the floor joists without the required thermal barrier.

**Table 67.11-3  
Insulation of Ducts And Pipes**

<b>Building Element</b>	<b>Total Amount Of Insulation Required</b>
Heating supply and return ducts located in vented crawl spaces and attic spaces	R-5
Steam heating supply and return pipes located in vented crawl spaces and attic spaces	R-4
Hydronic heating supply and return pipes located in vented crawl spaces and attic spaces	R-2
Domestic water heater pipes: Circulating, along entire accessible length in vented crawl spaces	R-2
Non-circulating hot and cold supply water pipes in vented crawl spaces	R-2

*Windows.* Windows shall be double-glazed or shall be provided with exterior or interior storm windows. The glazed or glass areas of storm windows shall be caulked or sealed to minimize air leakage.

*Doors.* Patio doors shall be insulated, double-glazed or equipped with storm doors. Where no vestibule exists, inward swinging exterior doors shall be insulated, double-glazed or equipped with storm doors. Door lites need not be double-glazed if they are within the door leaf. All storm doors shall be equipped with self-closing devices. All accessible joints and cracks in storm doors shall be caulked or otherwise sealed.

*Crawl spaces.* Ventilation shall be provided in the crawl space. The area of ventilation shall be at least 1/300 of the floor space. The area of ventilation shall be distributed equally to at least 2 openings in the foundation wall. The openings shall be located to provide cross ventilation. Where accessible, a vapor barrier shall be applied to cover the exposed earth.

*Combustion air.* Combustion air openings shall be unobstructed.

*Flow restrictors.* All showers heads shall be equipped with flow restrictors rated at three gallons per minute or less.

**Maine**

Maine has an energy efficiency disclosure form for rental units. They do not have required standards. The disclosure reporting form and its history can be found at <http://www.state.me.us/mpuc/legislative/archive/2006legislation/DisclosureFormRpt.doc>

The disclosure form is required for prospective renters. This is a form that must be filled out by the landlord and given to the renter. Through this form the landlord is required to inform the prospective tenant the energy efficiency features of the unit.

**Energy Efficiency Disclosure Form for Rental Units in Maine**

**Address of Rental Unit:** \_\_\_\_\_

**This rental unit \_\_\_ meets/ \_\_\_ does not meet/ \_\_\_ partially meets (*check one*) the minimum energy efficiency guidelines suggested below for rental units in Maine.**

You can expect your energy bills to be lower if your dwelling is insulated and has efficient appliances. There are several factors that affect energy costs. The areas below are the most important ones and indicate where this dwelling exceeds, meets, or falls below minimum efficiency guidelines suggested for Maine. *The **bold** items below are suggested minimum guidelines.*

**Heating Systems**

***Space Heat***

**Tested heating system efficiency** (minimum: 82%) \_\_\_% \_\_\_ unknown Test date: \_\_\_\_\_

**Exposed pipes or ducts in unheated crawl space insulated?** \_\_\_ yes \_\_\_ no

Heating fuels: \_\_\_ oil \_\_\_ natural gas \_\_\_ propane \_\_\_ kerosene \_\_\_ wood \_\_\_ electric \_\_\_ other

***Water Heat***

**Accessible domestic hot water pipes insulated?** \_\_\_ yes \_\_\_ no

Fuels: \_\_\_ oil \_\_\_ natural gas \_\_\_ propane \_\_\_ solar \_\_\_ electric \_\_\_ other

**Insulation**

***Walls***

**Insulated?** (minimum: cavity filled) \_\_\_ filled \_\_\_ partially filled \_\_\_ no insulation \_\_\_ unknown

Insulation thickness: \_\_\_ less than 3" \_\_\_ 3" to 6" \_\_\_ more than 6"

***Ceiling***

**Insulated?** (minimum: R38 or cavity filled) \_\_\_ filled \_\_\_ partially filled \_\_\_ no insulation \_\_\_ unknown

Insulation thickness: \_\_\_ inches or R \_\_\_

***Floors over unheated areas***

**Insulated?** (minimum: R21 or cavity filled) \_\_\_ filled \_\_\_ partially filled \_\_\_ no insulation \_\_\_ unknown

***Basement wall***

Insulated? (minimum: 2' below grade) \_\_\_ yes \_\_\_ no \_\_\_ unknown

**Windows and Doors**

**Windows** (minimum: 2 panes of glass) \_\_\_ single pane \_\_\_ single + storm \_\_\_ double (DG) \_\_\_ DG + low-e \_\_\_ (DG + low-e + argon gas) \_\_\_ triple or better

**Doors** (minimum: insulated or with storm) \_\_\_ insulated \_\_\_ storm \_\_\_ insulated + storm \_\_\_ neither

**Appliances**

**Refrigerator** (minimum: post 1995)

\_\_\_ yes \_\_\_ no \_\_\_ unknown \_\_\_ Energy Star rated

**Gas stove** (suggested electronic ignition) \_\_\_ electronic ignition \_\_\_ pilot light \_\_\_ no gas stove

You have the right to obtain a 12month history of electricity used by this rental unit by calling your local electric company. If this unit uses natural gas, you have the right to obtain a 12month history of natural gas used by the unit by calling your local natural gas company.

For further information about energy efficiency, contact *Efficiency Maine, 18663762463*

**Signatures: Landlord:** \_\_\_\_\_ **Tenant:** \_\_\_\_\_ **Date:** \_\_\_\_\_

*This information is accurate to the best of the landlord’s knowledge.*

**Other comments about the unit’s efficiency:**

**Guidelines and Explanation of Terms**

**Tested heating system efficiency (minimum 82%):** This is the combustion efficiency test typically performed by a heating technician when servicing and cleaning the burner.

**Floors over unheated areas:** Examples are an enclosed porch over a crawlspace. Doesn’t refer to a basement.

**Basement wall:** Basements in many new buildings are insulated all the way to the floor or footings (full height). Older buildings may have poor soil drainage, e.g. a wet basement. To avoid potential foundation damage from damp soils freezing and expanding, it is generally considered safe to insulate to 1’ to 2’ below ground level. This still saves considerable energy.

**Windows:** Sealed double glazing sometimes has gas fill such as argon or krypton. Low-e storm windows are also available. Either exceeds the basic single glass + storm.

**Doors:** A solid wood door is only a bit more insulating than a single pane of glass. Adding a storm door cuts heat loss in half. An insulated door can equal almost 10 panes of glass.

**Refrigerator:** Refrigerators made before 1995 have the make and model information on a metal plate inside, usually on the door. From 1995 on, the information is on a sheet of metal foil.

**Gas stove:** According to the U.S. Department of Energy, piloted gas burners can use more than twice the energy used by electric ignition gas burners.

Maine has suggested an Implementation Schedule for improvements to the Energy Efficiency Standards for Rental Units. This is their schedule for changes to the Standard.

<b>Space Heating System</b>	
1. Perform manufacturer’s recommended or appropriate maintenance on existing heating system	Deadline: 2012
2. Inspect, repair and insulate exposed heating ductwork and pipes in unheated areas	Deadline: 2012
3. When an old system is replaced or a new system installed, install a properly sized, energy	

efficient system (Energy Star, sized using Manual J process or equivalent)	
<b>Insulation</b>	
1. Seal holes and cracks in walls, floors, and ceilings	Deadline: 2012
2. Seal holes and cracks in foundations where wind can blow on pipes	Deadline: 2012
3. Insulate wall cavities to capacity	Deadline: 2015
4. Insulate attic cavities	Deadline: 2015
5. Fill joist bays over crawl spaces or similar unheated areas	Deadline: 2012
<b>Windows and Doors</b>	
1. Install storms or double pane or better windows	Deadline: 2015
2. Install insulated doors or storm doors	Deadline: 2015
<b>Appliances</b>	
1. Replace pre1995 refrigerators with energy efficient models (Energy Star or equivalent)	Deadline: 2012
2. Insulate accessible domestic hot water pipes	Deadline: 2012
3. When an old gas stove is replaced or a new one installed, install a unit with electric ignition	

**Exemptions:** The owner of a rental unit is exempt from following these efficiency practices when the practice is prohibited by historic district requirements or the structural configuration of the unit makes the practice impractical or impossible.

## **Iowa**

In 2003 there was an energy efficiency standard for rental properties proposed. House File 174 by Shultz, would create minimum energy efficiency standards for rental units, authorizing an inspection fee, and including civil penalties. It did not become law but the bill text can be found at <http://www.legis.state.ia.us/GA/80GA/Legislation/HF/00100/HF00174/Current.html> and states in part:

“An owner shall not transfer a rental unit unless an inspector has inspected the unit and has issued a certificate stating that the unit satisfies applicable standards.

Adopt by rule a code of minimum energy efficiency standards for the attics, sill boxes, heat and plumbing supply systems in unheated crawl spaces, showerheads, furnaces, boilers, air conditioners, appliances, lighting systems, and storm windows and doors of rental units. The standards shall include a standard that establishes a maximum air infiltration rate of the thermal envelope, as defined by the commissioner.

At the request of an owner, the commissioner shall apply the maximum air filtration rate standard in lieu of the standard for storm windows and doors. The standards shall require installation of specified energy conservation measures. The present value benefits of each energy conservation measure, in terms of saved energy over a five-year period after installation, shall be more than the total present value cost of installing the measures. The commissioner may adopt a separate standard based on thermal performance.”

## **Boulder, Colorado**

In 2007, consideration was given by Boulder, Colorado to implement a Residential Energy Conservation Ordinance (RECO) which would take effect either when the property changes hands (point of sale) or during the rental license inspection process. Here is a paper providing the merits of the ordinance. As with most RECOs the measures typically include a minimum level of attic insulation, duct sealing and insulation, water heater tank and pipe insulation wrap, and water measures and then hire a certified inspector to certify that the dwelling meets the program requirements. A proposal for a RECO in Boulder can be found at [http://www.recaonline.com/docs/arc/arc2008/PointofSale\\_BoulderCO.pdf](http://www.recaonline.com/docs/arc/arc2008/PointofSale_BoulderCO.pdf). The report contains useful comparison charts of RECO prescriptive measures by cities which have enacted the program.

## **Iowa Landlord Association**

I interviewed Dave Sollenbarger, Director of the Iowa Landlords Association. The Association encourages owners to be efficient. They would not support a legislative set of energy efficiency standards.



Note: IAMU has identified the following additional references for cities with energy efficiency standards for rental property.

### **Nevada**

Nevada Senate Bill 437 requires the Office of Energy to establish a program for evaluating energy consumption of residential property in the state. The requirement is that the evaluation be conducted upon the sale of property, although the provision is self-regulating and realtors are not required to play a role or have any responsibility. Here is a paper providing the merits of the ordinance. See Option 6 on page 29. <http://energy.state.nv.us/taskforce/Efficiency%20Workshop/NV%20strategy%20--%20full%20report%2041109.doc>

### **San Francisco, CA**

Since 1982, San Francisco has enforced a RECO which is overseen by their Department of Building Inspection. The Department of Building Inspection/Housing Inspection Services or a City-certified private energy inspector conducts the inspection. Inspections under this RECO must be completed prior to title transfer or written agreement between buyer and seller such that the buyer will comply within 180 days.

A San Francisco report (from <http://www.earthfuture.com/seconomy/sei13.asp>) states that “the cost to San Francisco’s city budget has been nil, and the cost of enforcement through the city’s Housing Inspection Services Division has been very inexpensive.”

To learn more about San Francisco’s RECO visit

[http://www.sfgov.org/site/uploadedfiles/dbi/Key\\_Information/19\\_ResidEnergyConsBk1107v5.pdf](http://www.sfgov.org/site/uploadedfiles/dbi/Key_Information/19_ResidEnergyConsBk1107v5.pdf)

### **Berkeley, CA**

In 1987, Berkeley, California established its RECO within its Energy Office and applies to all residential properties when sold or undergoing renovations valued at more than \$50,000. The City of Berkeley’s website provides examples of forms for the city inspector and buyer/seller and a RECO Compliance Guide which offers a useful instruction manual for property owners.

[http://www.ci.berkeley.ca.us/uploadedFiles/Planning\\_and\\_Development/Level\\_3\\_-\\_Energy\\_and\\_Sustainable\\_Development/Residential%20Energy%20Conservation%20Ordinance%20Compliance%20Guide%202008.pdf](http://www.ci.berkeley.ca.us/uploadedFiles/Planning_and_Development/Level_3_-_Energy_and_Sustainable_Development/Residential%20Energy%20Conservation%20Ordinance%20Compliance%20Guide%202008.pdf)

### **Burlington, VT**

Burlington, Vermont established Minimum Rental Housing Energy Efficiency Standards in 1997. The ordinance applies to rental housing where the tenant pays heating bills, but not residential rental properties where the owner pays heating bills. Burlington's ordinance requires energy inspection at the time of sale of the rental unit. See <http://www.burlingtonelectric.com/EnergyEfficiency/tos3.htm> Under Burlington's ordinance, property owners have one year from the date of sale to bring the property into compliance. Here is a simplified explanation about the workings of the energy ordinance from the property owner's perspective. <http://www.burlingtonelectric.com/EnergyEfficiency/tos2.htm>

### **Ann Arbor, MI**

The Ann Arbor, Michigan Municipal Code, Section 528 of Chapter 105 requires minimum energy efficiency/weatherization standards for all rental dwellings, dwelling units, rooming units and premises in the City of Ann Arbor. In 1985, Ann Arbor, Michigan set basic winterization standards in rental housing for which inspections would take place every two to three years rather than during the time of sale. The weatherization requirements set by Ann Arbor do not apply to a property when the tenant does not have to pay utility heating bills or when the property was constructed after 1977 with an exterior envelope in compliance with energy codes.

The City of Ann Arbor's Municipal Housing Code Chapter 105, Section 8:528 provides as follows and can be found at: <http://bcap-energy.org/files/Level%20IV%20Ann%20Arbor%20MI%20City%20Code%20POS.pdf>

8:528. Basic winterization in rental housing.

(1) *Weatherization requirements.* In order to help reduce the high cost and ecological harm of excess energy use, it is hereby ordained that no person shall let to another for occupancy any dwelling or dwelling units which are not equipped with weatherization in safe, good order as follows:

(a) All cracks or gaps in or between building materials which are used on exterior building surfaces or on surfaces which interface between heated and unheated spaces within the building, which allow loss of heat from the interior to exterior of the dwelling, or from heated to unheated spaces, including as well, where necessary, cracks or gaps in the interior or exterior walls, shall be sealed with weatherstripping or caulking or other insulation device or system so as to assure reasonable weatherization. Such weatherization shall include but not be limited to the following: All cracks at window frames where glass meets frame, and where frame meets wall, shall be applied with sealant material or weather resistant caulking outside the dwelling as needed. Cracks at door frames of doors providing access from unheated to heated space where any glass meets frame and where frame meets wall shall be applied with a sealant material or weather resistant caulking, both inside and outside the dwelling as needed. Cracks in windows or doors where sliding or swinging windows or doors meet their frames shall be sealed with spring steel, rubber, foam or other weatherstripping or insulation device, except where such window or door fits so tightly in its frame that such insulation is not useful to prevent heat leakage. Cracks at locations where the building structure is penetrated by utility connections, pipes, wires, dryer vents, exhaust fans or other objects, devices or systems, shall be applied with a sealant material or weather resistant caulking as needed. Accessible cracks where building foundation and structure meet, and where exterior siding material meets trim, and where exterior siding boards or pieces have separated due to warping, and at all fixed joints on the building, shall be repaired, if needed, and applied with a sealant material or weather resistant caulking.

- (b) In every unheated attic or other unheated top story directly under the roof, the floor shall be fitted with insulation of such quality and grade that the insulation material alone, exclusive of the floor material, provides an R insulation value of not less than R-30.
- (c) In every heated attic or other heated top story directly under the roof, the roof shall be fitted on its underside with insulation material of such quality and grade that the insulation material alone, exclusive of the roof material provides an R insulation value of not less than R-30.
- (d) In the case of an unheated attic or other unheated top story, a variance may be granted in the proper circumstances for insulation under the roof rather than on or in the floor.
- (e) If prior to December 1, 1985 the attic floor or roof has been insulated such that the insulation R value of the installed insulation alone, disregarding the insulating value of the structural elements is at least R-19, then the R-19 insulation shall remain sufficient and in compliance with this section.
- (2) *Exceptions.* This section does not apply in the case of:
- (a) An owner-occupant landlord;
  - (b) A bona-fide nonprofit cooperative;
  - (c) A bona-fide tenant subletting his or her residence;
  - (d) A homemaker on sabbatical or temporary leave or whose personal home is rented up to two years while it is for sale;
  - (e) A landlord who pays all of the utility heat bills for the dwelling and does not charge the tenant for heat or increases in utility heat bills;
  - (f) Where due to the unusual structural characteristics of the building or unit, the required weatherization cannot possibly be installed without extraordinary and unusual structural change, or would have no weatherization or insulating value, or is unnecessary because the respective floor or roof is so constructed as to continuously and at all places exceed without insulation the R value of the required insulation.
  - (g) Buildings constructed later than 1977, with the exterior envelope in compliance with Model Energy Code requirements, shall be exempt from the R-30 insulation provisions provided the exterior envelope and component materials are maintained.
- (3) *Effective date.* The effective date for this section (8:528) shall be December 1, 1985. Required weatherization shall be kept in good order.
- (4) *Violations.* Violations of this section shall be punishable by a fine of \$1.00 to \$100.00 at the discretion of the court, but no more than \$50.00 for a person's first offense, and shall not be punishable by jail.
- (Section 8:528 adopted pursuant to the general city election of 4-1-85; Ord. No. 66-87, § 1, 12-21-87; Ord. No. 54-92, § 9, 8-17-92)

### **Davis, CA**

In Davis, California a building owner must show the building to be compliant with the City of Davis Building Code prior to sale or transfer of the building. The owner must make the building code compliant within 90 days of sale/transfer. Davis, California's Municipal Uniform Housing Code requires retrofitting buildings to meet energy efficiency standards. The ordinance can be found under Division 4, Section 6-29 Energy Conservation Retrofit Regulations:

<http://www.smartcommunities.ncat.org/buildings/dav06iii.shtml#6-29>

### **American Council for an Energy-Efficient Economy**

In 1997, the American Council for an Energy-Efficient Economy published a report entitled "Policy Options for Improving Existing Housing Efficiency" which highlights the details of many Residential

Energy Conservation Ordinances (RECOs) some of which are referenced above. ACEEE's report also provides a sample ordinance to give the reader an idea of what an actual energy conservation ordinance might look like and the type of language that may be used. See Attachment A: Sample Residential Energy Conservation Ordinances. Also, see Attachment B: Residential Energy Conservation Ordinances which identifies valuable lessons regarding effective approaches to improving the energy efficiency of existing housing through RECOs and weatherizations standards gleaned from several local programs.

**Massachusetts Institute of Technology**

In 2008, graduate students at the Massachusetts Institute of Technology published an article entitled "Overcoming Barriers to Energy Efficiency for Rental Housing" which identifies a variety of policy options and solutions to facilitate energy efficiency for rental housing. See Attachment C.