



## Office of the Ohio Consumers' Counsel

Your Residential Utility Consumer Advocate


# CONSUMERS' FACT SHEET

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# SMART ENERGY TIPS FOR MANUFACTURED HOMES



Energy efficiency improvements are some of the most cost-effective ways to lower your energy bills. With the average Ohio household spending about \$2,500 per year on electricity and natural gas, taking steps to improve efficiency is a worthwhile undertaking for consumers seeking to manage their costs.

For manufactured home owners, many of the actions taken to improve energy efficiency are the same as those done for houses or apartments. But there are unique energy efficiency upgrades manufactured homes can benefit from as well. Consumers can benefit from improvements if their home is drafty, built before 1994, or if inside temperatures are difficult to regulate.

In this guide, the Office of the Ohio Consumers' Counsel (OCC), your residential utility advocate, offers several tips that can help make a home more comfortable and save money at the same time. By incorporating just a few of these smart energy tips for manufactured homes, consumers can start to see savings and be able to better manage their monthly energy bills.

## Air Infiltration/Leaks

Air infiltration or leaks inside and outside the home are some of the biggest causes of heat loss. Because manufactured homes are usually set above the ground

exposing the underside, the outside walls are composed of several panels and the exterior may have been disturbed during transport, they are especially susceptible to air leaks and infiltration.

These leaks and infiltrations may increase the amount of money consumers are spending monthly on their energy bills. Checking and sealing areas around the home where air can leak in and out can help improve energy efficiency. Places to check include:

- ▶ Door and window frames;
- ▶ Everywhere penetrations in the home exist, including: cable, electric, natural gas, telephone and water lines; heating/cooling system flues; air ducts, and ventilation fan ducts;
- ▶ Edges and seams of the floor barrier ("belly board") located under the home;
- ▶ Interior plumbing fixtures, electrical outlets, switch plates and fixtures; and
- ▶ Seams, joints and holes of interior walls at the corners, ceiling and floors.

Caulking seams, joints and holes, installing weather stripping around doors and windows, and placing gaskets behind outlets and light switches can

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## CONSUMERS' FACT SHEET



go a long way toward improving energy efficiency in a manufactured home. Using acrylic caulk is recommended for interior weatherizing, but more durable silicone may be used for outdoor sealing projects. To properly seal the home, caulking should be added around window and door frames, plumbing fixtures, where utility lines enter the home, baseboards, ceiling fasteners, electric fixtures and ceiling, wall, floor and panel joints.

Consumers also should consider installing or repairing skirting (exterior panels that extend from the bottom of the home to the ground) around the manufactured home to reduce drafts and the chances of plumbing freezing during the winter.

### Heating/Cooling

Because heating and cooling are the primary energy costs consumers pay on a monthly basis, it is important to ensure the furnace and air conditioner are in top working condition year-round. This can be done by regularly changing air filters and having annual tune-ups performed. Much of the filter and duct maintenance can be done by the home owner, but a professional should be called to check the combustion process, clean burners and the heat exchanger, and analyze the condition of the exhaust vent.

### Furnace

Tuning a furnace is typically done before the start of the heating season. This requires cleaning dirty and dusty parts, lubing movable parts, if necessary, and checking the tension of the blower belt, if there is one. More extensive tune-ups can be performed by a professional.

### Step-by-step furnace tune-up

1. Turn off power to the furnace before proceeding with the tune-up. Remove the blower door and clean out any dust using the brush attachment of a vacuum cleaner. Use a damp rag to clean any areas that cannot be reached with the vacuum. Try to remove as much dust and dirt from the blower wheel as possible. Dirt and dust can reduce the air flow capacity and reduce furnace efficiency.
2. Some older motors have oil holes to lubricate the blower fan and motor. Apply oil according to the manufacturer's instructions. This is typically done once a year. Not all fans and motors will require lubrication if they have sealed bearings.
3. If the furnace is equipped with a blower that has a belt and pulley system, check the tension of the belt. It should flex one-half an inch from center in either direction.
4. Replace the blower door. Tighten the screws to make it as air tight as possible.
5. Replace the furnace filter as recommended by the manufacturer. Remember to correctly install the filter so it is most effective. A fiberglass filter should be sufficient to protect the blower and blower motor. Dirty filters may restrict air flow affecting the efficiency of the furnace.

### Ducts

Once the furnace has been tuned, check to see if the air ducts are easily accessible. Single-wide manufactured homes have one length of duct from one end to the



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other; and double-wide homes have two which are connected with a crossover duct. Make sure this crossover duct is properly connected and securely lifted from the ground.

If there are any leaks in the ducts, they can be easily repaired with foil tape or mastic available at home improvement stores. Ducts that leak heated air into unheated spaces can add hundreds of dollars to consumers' energy bills each year. Insulating the ducts also can help keep air temperatures in the home more comfortable all year.

In some older manufactured homes, the heating ducts end after the last register on each end of the home. Consumers can check for this by using a flashlight and mirror to inspect inside the duct. To fix this, install a piece of sheet metal the width of the duct that scoops from the bottom of the duct to the back of the register. It will help guide heated air into the room instead of being wasted.

### Air conditioner

Air conditioner tune-ups are usually performed in the spring before hot temperatures hit. Whether consumers have a central air conditioning system or a window air conditioner, there are steps to take that can help improve the efficiency. Consumers who have a room air-conditioner should remember to install it into a window that is on the north or east side of the home or protect it from the sun. This will allow the air conditioner to perform more efficiently.

### Step-by-step central air conditioner tune-up

1. Disconnect the power by turning off the circuit breaker for a central A/C unit.
2. Remove debris, including leaves and dirt, from around compressor unit.
3. Carefully straighten the cooling fins on the condenser. Bent fins block the free flow of air and can affect the unit's efficiency. A small rounded knife or specialty fin comb can help straighten the fins.
4. Clean the fins with a soft brush and soapy water to remove any dirt that may be impeding air flow. Rinse with water using gentle pressure. Too much water pressure can damage the fins.
5. Replace the air filter according to the manufacturer's instructions and restore power to the air conditioner.

### Step-by-step window air conditioner tune-up

1. Unplug the air conditioner, remove it from the window and take it outside for cleaning.
2. Remove the casing to visually inspect parts of the window air conditioner.
3. Use a garden hose to clean out dust, dirt, leaves and other grime that has built up on the inside of the unit. A mild cleaner also can be helpful. Allow the unit to completely dry before plugging into an outlet.
4. If the fan and blower motor have an opening for oil, lubricate the parts according to the manufacturer's instructions.



## EASY WAYS TO SAVE

### Electricity

- ▶ Programmable thermostat \$100+ per year
- ▶ Kilowatt meter \$56 per year
- ▶ CFL light bulb \$55 per year

### Water

- ▶ Water heater blanket \$75 per year
- ▶ Low-flow showerhead \$50+ per year
- ▶ Low-flow faucet aerators \$30 per year

### Insulation

- ▶ Window and door insulation \$17 per year
- ▶ Draft sealers \$24 per year
- ▶ Pipe insulation \$5 per year



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The Office of the Ohio Consumers' Counsel (OCC), the residential utility consumer advocate, represents the interests of 4.5 million households in proceedings before state and federal regulators and in the courts.

The state agency also educates consumers about electric, natural gas, telephone and water issues.

For more information, please visit the OCC website at [www.pickocc.org](http://www.pickocc.org).



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5. Straighten the cooling fins on the back of the unit.
6. Clean the air filter and air conditioner casing with soap and water, and allow it to dry.
7. When installing in window, check the seals for wear. Replace the seals with foam insulation, if needed.

### Insulation

Adding insulation is a cost-effective improvement that can reduce energy costs. If you are uncomfortably cold in the winter or hot in the summer or are paying excessive energy bills, adding insulation will help create more uniform temperature, improve comfort and regulate energy bills.

In manufactured homes, the easiest places to add insulation are on plumbing and heating ducts. Wrap appropriately sized insulation on pipes and ducts; heated water and air will keep warm longer.

Consumers also may be able to take on a do-it-yourself project and add insulation to the floor cavity. In Ohio, it is recommended to have insulation in the floor that is at least 8 to 9.5 inches thick. To insulate or re-insulate the floor, remove the belly board or floor barrier and add batt insulation between the floor joists.

If **replacing** the insulation, install the new batt with the paper backing facing up toward the floor. If **adding** insulation, install the batt with the paper backing facing down. Remember to slice the backing with a knife so moisture can escape if adding insulation. Hold the insulation in place with wiring or staples attached to the floor joists.



An alternative flooring insulation option would be to supplement existing insulation by installing rigid insulation on the outside of the floor barrier or belly board area. Simply secure the insulation to the floor joists to help improve energy efficiency. Consumers who are unfamiliar with adding insulation should seek the assistance of a qualified professional. A professional with proper equipment may be able to install blown-in fiberglass insulation as another alternative to increase floor insulation.

Consumers who believe there is not adequate insulation in the roof cavity can have it improved to help increase energy efficiency. Adding insulation to the attic may require qualified professional help.

### More tips

These tips can go a long way toward improving the efficiency of a manufactured home. There are more things that can be done to use electricity, natural gas and water more efficiently. For additional energy-saving tips, refer to the OCC's "Smart Energy Tips" and "Vampire Power" publications.

Certain customers may qualify for free weatherization assistance through the Home Weatherization Assistance Program. Customers can refer to the OCC's fact sheet called "What you need to know about the Home Weatherization Assistance Program" for further information.

Consumers also may refer to the following documents for energy-saving information:

- ▶ "Manufactured homes: Saving money by saving energy" – U.S. Department of Housing and Urban Development, Office of Policy Development and Research;
- ▶ "Manufactured home energy-efficient retrofit measures" – U.S. Department of Energy; and
- ▶ "The energy-efficient manufactured home" – Missouri Department of Natural Resources.