



# E<sup>3</sup>A: Energy Management for Home

## Steps in the Home Energy Series

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## Cooling your home

Missouri summers can vary from pleasantly warm to extremely hot and humid. These low-cost and no-cost strategies can help cut energy costs to cool your home.

### Weatherization

Sealing air passages and insulating your home are excellent cooling strategies. The same weatherization methods that keep heat in during winter keep it out during summer. Attic insulation is particularly important, as it ensures that the sun's rays only heat the attic and not the living space below. You should have both eave and ridge vents; together, they provide a pathway for heat to rise up and out. See the guides on insulation and air-sealing in this module for more details.

### Ventilation

In Missouri, there are many opportunities to enjoy a refreshing, cool breeze in the early mornings and late evenings during spring and autumn. To make the most of these cooler times, open windows and doors on opposite sides of your house to let the breeze flow through. Openings at the highest and lowest points (such as a front door and a back upstairs window) are particularly good natural ventilators. Don't leave your house open all day though. Once the morning coolness is gone, close it up until evening.

Use fans to create even more air flow through your house during these cooler periods. Whole-house fans mounted in the attic work best. They pull warm air out of living spaces through ceiling vents and blow it outside through the attic vents. Other options include ceiling-mounted paddle fans and portable box fans. A box fan mounted in an upstairs window blows warm air outside, which prompts more cool airflow into ground-floor windows and doors.



### Window shading

Houses warm up fast with direct sunlight pouring through windows. It's welcome in winter, but during summer it is best to keep the sunshine out. In the morning, leave east-facing curtains or shades pulled until the sun climbs higher in the sky. Later on, leave shades pulled on south- and west-facing windows to block the sun throughout the day. The most effective interior sun blocks are curtains and shades with light colors facing outside. Light colors reflect, rather than absorb, the heat. You can also buy special solar screens made of densely woven fiberglass or aluminum. They block out up to 75 percent of sunlight. Even more effective (though less convenient) are exterior shutters or shades because they keep the sun's heat entirely outside.

One option for windows is to apply a reflective plastic film directly to the glass. As an alternative to permanently applied film during winter, some brands are designed to peel off to be stowed until next year. Films are also available in pull-down retractable roller shades. Alternatively, window awnings let you block the sun while keeping the curtains open. Awnings should extend at least halfway down the window on all three sides. You



There are many types of window shades to keep your house cool in the summer. Pleated shades fit inside the window.

can buy or make them out of canvas or nylon. Just remember to take them down on south windows in the fall, so you can catch the winter sun.

### Inside your home

You might be surprised by how much heat major appliances add to your house. For example, the refrigerator spills heat into the kitchen as its motor works to keep food cold. Open the doors as little as possible during the summer to keep it from working overtime. Also, cook outside on the grill whenever possible to avoid generating heat from the oven and burners. Run other appliances such as washers, dryers and dishwashers at night or early in the morning when it's cooler. Additionally, use lights sparingly as they also generate heat.

It helps to keep humidity levels down because moist air will make your home seem hotter than it is. For help, see the module on condensation in the home. Dress appropriately, and wear loose-fitting, lightweight shorts and short-sleeve shirts. Every bit helps.

### Landscaping

Landscaping is a more long-term option to conserve energy, but it's never too late to start. It is equally important to landscape for winter and summer in Missouri's climate, which includes extreme cold and hot weather. A grove of evergreens to block the cold northwesterly winds will trim heating costs. Choose and place plants so they do not form a barrier when direct rays of the sun are needed for warmth in

winter, but so that they provide shade for the house from the intense heat of the sun in summer.

To help keep your home cool in the summer, plant small- to medium-height deciduous shade trees near the east-, south- and west-facing walls of your house. During summer, they will block windows from the morning, afternoon and evening sun, and in winter they will shed their leaves to let the sun in. To shade your roof, you could plant taller deciduous trees in the southwest and southeast corners of your yard.

Visit a local nursery or call your local extension office to find out what tree varieties grow best in your area and how to care for them. Also, be sure to plant away from overhead power lines and underground water, sewer and utility lines. See MU Extension guide G6910, Landscape Plantings for Energy Savings, at <http://extension.missouri.edu/p/G6910> to learn more about how landscaping can affect energy savings.

### Architectural elements

You don't have to wait around for the trees to grow to enjoy shade and wind protection in your yard. Tall fences will also block the north winds, and trellises can shade your windows and provide a nice cool spot for summer lounging.

### Cooling strategies

To help cool your home, follow these four proven cooling strategies:

- Air-sealing with caulking and weatherstripping
- Attic insulation and ventilation
- Air circulation
- Cooking outdoors



A combination of eave, left, and ridge vents creates a natural convection current, keeping your attic cool and moisture-free.

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