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home. Amory Lovins, a physicist, and energy ac-tivist, points out that modern refrigerators often function like heaters as well as coolers. He explains that old time refrigerators used to have the motors on top so that the heat they gave off would rise above the refrigerator. Today's appliances feature the motor underneath the refrigeration compartments where heat from the motor helps heat the food, causing it to run more often.

To make matters worse, frost free refrigerators and freezers emply electrical resistant strip heaters to melt off frost and to keep doors from sticking. In addition to using electricity themselves, the strip heaters give off heat which requires the refrigerator

motor to run more often. In order to get more capacity in the same size refrigerator, manufacturers have cut down on the thickness of the walls over the years. Unfortunately, in some cases thinner walls have also meant less insulation, which means more heat gain internally for the refrigerator and more on time for the motor, and higher electric bills for you.

If you are wondering how you can break this vicious cycle of inefficient refrigeration, Charlie Hall of West Topsham, Vermont may have an answer for you. Hall, you may remember, was the man the Earth Studies Program hired to teach the hands - on portion of their wind workshops in 1980. As a professional consultant on alternative energy, Hall is always looking for ways to save energy. When he built his passive

solar home in Vermont he decided to recess his refrigerator into the adjacent pantry. He built an insulated enclosure around the refrigerator top and sides. The back wall of the enclosure featured one inch wide vents along the top and bottom.

The vents allow the motor are refrigerant coils to receive good air circulation, and the two batts of 33 fiberglass insulation provide an R value of 22. Hall finished the insulated enclosure with sheetrock to match the walls of the pantry. The enclosure fits tightly on the top and sides but leaves a two inch air space at the back for ven-tilation.

The first night the refrigerator spent in its sed home, Hall left the



setting the same as it had been in its more exposed location in the kitchen. The next morning Hall discovered that the food in the refrigerator portion was freezing while the food in the freezer had frozen solid. He had to set the thermostat back to its lowest setting to maintain a 41 degrees F temperature in the refrigerator and a 5 degree F in the freezer. In more extended testing, Hall discovered the refrigerator only used one third the electricity it required before it was placed in its insulated cocoon.

Of course, you can apply the same principle to your electric water heater and save even more money with even less work. You can buy batts of fiberglass insulation and wrap your water heater in them, or you can buy a precut kit for your par-ticular style of water heater and obtain a more finished appearance. Either way, the extra insulation will usually pay for itself in short order. If you have the space to

recess your refrigerator, you can try both methods and see which saves you more. Another advantage of the recessed refrigerator is that it will take up less space in the kitchen, and the noise of the motor will be less noticeable due to the fact it will be running less and it will be baffled by the insulated walls.

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