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Some tips on saving energy and keeping your cool

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"Please don't print our number," a voice on the Solar Hotline pleaded. "We're overloaded. Lights are blinking on eight phones right now."

President Carter has something to do with those lights. So long ago most calls on the toll-free Solar Hotline came from professionals — planners, architects, builders or manufacturers with sunny ideas. Then the President proposed tax credits for homeowners installing solar heating equipment, as part of his national energy program.

Suddenly, the hotline lit up with 4,000 calls. Homeowners had questions about every solar energy product under the sun. If they have any more questions they should mail them to the National Solar Heating and Cooling Information Center, the power behind the hotline, at Box 1607, Rockville, Md. 20850.

"Just tell them to write to us," the hotline voice went on. "Please."

Elsewhere around the country, other hotlines were buzzing with energy-conscious calls. Some were solar. But many were more down-to-earth.

"Will house plants grow under fluorescent lights?" "Is it better to take a shower instead of a bath?" "I have central air-conditioning. Does a fan in the attic help?" "Is there a natural gas shortage?"

Such questions were typical of those heard recently over the Energy Hotline — (516) 498-7766 — of the Center for Energy Policy and Research at the New York Institute of Technology.

And the answer to all of them is yes.

Until just recently, Gale Tenen, the center's deputy director, had "a sense that people aren't sure there is an energy crisis." After a "hectic" week of hotline calls, she was not so sure that they're not sure.

"At least the people who call us are interested enough to find out more," Tenen said.

Everybody wants to find out more, to judge by national polls taken after the President's televised address to Congress. Apparently, many Americans think that the energy situation is, indeed, critical and that the President's plan would mean changes in their lives.

Some families are already drawing up their own energy plans. If not to do "moral war" on waste, as Carter put it, at least to fight back at the utility bills. In any case, they had best be armed with expert tips in energy saving. And the experts seem to dream up new ones every day.

Tips from experts

Herewith, a compilation of such tips, plus a longer look at conservation in the kitchen and around the house:

No cost

—Fix leaky faucets. One drop a second means two gallons of water a day down the drain. When the water is hot, it also means fuel down the drain.

—Remove logs from leaned radiators in winter. Replace with pieces of grill work, if the effect bothers you. The heat saving won't.

—Close fireplace damper when not in use. And don't make fires on cold days unless you have money to burn. Most fireplaces actually lower inside temperature. All your heat goes up the chimney.

—Put an appliance on the night shift. Con Ed says that if enough consumers use large appliances during off-peak hours — before 10 a.m. and after 10 p.m. — money would be saved in the long run.

—Check the location of your thermostat. Make sure it's away from drafts, direct light and other heat sources.

Nominal costs

—Invest in a timer so you can turn your air-conditioner off on leaving the house and still not come back to a steam bath. The timer will tell the air-conditioner to start cooling shortly before you return.

—Build a greenhouse in the window. Plants will thrive, fuel bills will shrink. This project requires a south window and at least $20. Plans may be found in the Fuel Savers, a useful booklet by Tea Inc., of Harrisville, N.H.

—Wrap an insulation blanket around the hot water tank. The blankets sell for about $25 and the final effect is something that looks "like a hot water bottle," one homeowner says.

—Switch to water-saving showerheads. They cut the water flow by half while still giving a good soak. The University of Massachusetts says Nova showerhead in its dormitories saved $130,000 on the annual fuel bill. Nova showerheads cost $12.95 and are made by Ecological Water Products, 142-148 Spring Street, Newport, R.I. 02840.

—Attach sun screens to the outside of windows. They're the solar age answer to awnings. The material used is woven vinyl-coated fiberglass and the cost of doing an average east window runs about $12. For more information write Vimco Corporation, Solar Shield Division, P.O. Box 212, Laurel, Va. 23060.

Cooks' cutbacks

In the Great Energy Cookoff, the smallest appliance to make the meal wins the game. The electric skillet, therefore, beats the one-pot meal atop the range, which beats the oven casserole.

Why? The heating unit is built into the skillet, so the heat doesn't have to travel so far to the food. Electric coffee pots offer the same energy bargains. But don't keep your pot plugged in until you're ready for a second cup. Emulate Theresa Murray of the Bronx, who empties her perked coffee into a thermos.

"It's bad enough I have to pay these coffee prices," Mrs. Murray says.

After the small cooking appliances, your next best bet is the range. Be sure to use the right size pot for the surface unit, though, one with a tight lid and a flat bottom. Also, be sure to use the least possible amount of water. Obviously, spaghetti won't come alive in a few splashes of water, vegetables will. This way, you get extra vitamins as well as save energy.

The oven is no energy bargain at all, unless you cook several dishes at the same time. When using more than one rack, don't place pans directly over each other. When the recipes call for slight variations in temperature — say, 325 degrees or 350 or 375 — remove each dish as it's done. When the family grumbles that the beans are dry, you can tell them it was all Con Ed's idea.

Another one of Con Ed's ideas is to turn off the oven 20 minutes early and let the roast count home on retained heat. Oven peekers pay a penalty of 25 degrees, Con Ed warns.

Now, what about microwave ovens? Is it true, as the manufacturers claim, that you conserve energy by "waving" rather than cooking food?

Consumer Research tested 10 models and reported the results in a recent issue of its magazine. "There is no doubt," the magazine noted, "that the new ovens offer speed of cooking and minimum use of energy. If one wishes to warm a sandwich or freshen a doughnut, 30 seconds of exposure may more than do the trick."

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Using the classic baked potato example, the researchers went on to point out that a microwave oven will take one medium-sized potato in five minutes, or 10 times faster than a conventional oven.

The trouble starts when you decide you want two baked potatoes. The "wave" time doubles for two, quadruples for four and so down the garden path.

"Baking time doesn't change in a regular oven by adding a moderate amount of potatoes," Consumer Research reasoned. "Further, with careful planning, you can cook the whole meal in a regular oven at one time."

But you already knew that.

Lights off and on

Many consumers now realize it pays to switch off lights, even for brief periods. But when they switch them off during the same period, the dark can be fiscally cheerful. A Riverdale cooperative recently reduced its Con Ed bill by cutting 18,000 kilowatts, mostly during the 8 p.m. to 8 p.m. Peak periods.

Individual consumers can save more, too. Some ways of doing this are: using lower watt bulbs in halls, closets, anywhere lighting is not critical; using a higher watt bulb instead of several smaller ones; making lights do double duty for their current. For example, put your philodendron under the desk lamp.

By far the best saver is to replace incandescent bulbs with fluorescent tubes, which last 10 times as long and use half the energy. Fluorescents work well in kitchens, bathrooms and laundry rooms, of course. But some people shudder at the idea of frank fluorescent lighting in the dining room, say.

"They make you look as if you'd been embalmed, or ought to be," a woman complained.

On the other hand, why not try the solid-state dimmer lights for a flattering glow at dinner? Better still, the ultimate saver of faces and energy — candlelight.

New appliances

The Federal Energy Administration has a shopping tip for appliance buyers. Don't just look at the price tag. Look to see which model is both cheapest in initial price and energy costs over the life of the appliance.

This technique is called "life cycle costing" and practicing it is tricky at this point. Some manufacturers list energy costs on their labels. Some do not.

One guide is to watch what the government does. The General Services Administration, which purchases appliances for federal use, evaluates their life-cycle costs before buying. The names and model numbers of the agency's purchases are available to the public.

The agency evaluates only the products of manufacturers who bid on its contracts, though, so there may be products on the market with even cheaper life cycle costs. For a listing of the latest purchases write to: Consumer News, Room 3300, 300 Independence Avenue, S.W., Washington, D.C. 20201.

When it comes to air-conditioners, the factor to watch for is the E.E.R., or energy efficiency ratio. It tells you how much cooling you get for every watt of electricity used.

If you decide to go to central air-conditioning, consider installing a fan to ventilate the attic. Hot air trapped up there can make your system work much harder. The installation job should cost $125 or so.

Old appliances

Suppose you're not in the market for new appliances. How do you give the old models an energy boost? Generally speaking, by good housekeeping and selective use.

Dust is a great insulator. A dusty refrigerator, for example, has a hard time keeping its cool. Once a year, pull it out — m the wall, disconnect the plug and clean the coils and compressor. Frost also be an insulator when it builds to more than a quarter of an inch. So defrost regularly, unless of course you have a frost-free model, which may be drawing almost twice the juice of a plain, old refrigerator.

In any case, check the refrigerator and freezer for airleaks. To do this, you close the door on a dollar bill. If the dollar slides out easily, add another nine ones, and head for the hardware store. Tell the clerk you want a new gasket.

Other appliances that respond to a little fussing are air-conditioners, which need new filters periodically, and clothes dryers, which need their lint traps cleaned every load.

Some experts suggest that you give your dryer a summer vacation and hang the clothes outdoors. Electric dryers drain as much current as self-cleaning ovens, the experts say. You should save enough money to buy miles of clothesline.

Your washing machine should also be doing fewer but fuller loads of laundry, using cold water whenever possible. A 10-minute wash cycle is plenty for most loads.

And your dishwasher should be shut off before the dry cycle. The air dries the dishes. But don't be tempted to start washing dishes by hand to save energy. Not only will you risk dishpan hands, you will probably end up wasting energy by rinsing under running hot water.

The largest share of the family's energy dollar goes for home heating. Next comes hot water heating. Both areas offer the potential for sizable savings and the Carter plan would offer still more incentive.

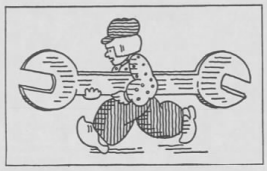
Under the plan, homeowners would get tax breaks for installing insulation or solar heating systems. Rewards are not only proposed but already earmarked for 2,000 pioneers who equip their homes with solar hot water heaters.

The solar water heaters cost about $1,500 to buy and install. They provide only 75 per cent of the energy needed to raise the water to 135 degrees, so conventional back-up systems must be used.

Even so, Dr. Zebulon Taintor, a Manhattan psychiatrist, says it pays to "go solar." The Taintor family of four lives in an East Side brownstone with solar panels on the roof.

The solar system keeps the water temperature at about 120 degrees. When it needs help, an automatic gas firing system cuts in.

"We never thought solar energy would do it all," Dr. Taintor said, adding that he was happy enough with a 60 per cent drop on his electric bill.



Insulation, cheaper than fuel

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Although very few people nowadays have "money to burn," most experts agree that nine out of 10 homeowners are actually doing just that by not having their houses adequately insulated. In winter, money is being "burned up" because the heating system consumes much more fuel than it would if the house were properly insulated; and in summer, this same lack of insulation causes air-conditioners, refrigerators and other appliances to work much harder than they should, unnecessarily adding to already high electric bills.

Ideally, the time to insulate a house properly is during construction, when the house presumably will have been designed with provisions for installing optimum insulation in outside walls, attic and roof (wider spacing of studs and thicker walls that provide room for heavier layers of insulation). However, this does not mean that existing houses cannot be improved. Insulation can be added in various ways, and fortunately for the homeowner, this is one improvement project that will end him nothing in the long run — it will save him money by cutting down substantially on fuel and electric bills in future years.

The amount of insulation needed for optimum savings varies with the style of construction, the exposure and location of the house, and the price of fuel (it is the price of the latter fuel that will determine how many years it takes to recoup — in fuel savings — the cost of the insulation added). Because there are so many variables, in addition to those just mentioned, no one can flatly state how much the savings will be in dollars and cents for a particular house, or how long it will take for an insulation job to pay for itself. However, most tests indicate that in many cases a good installation will pay for itself within two to four years — after which savings will, of course, continue indefinitely.

There are, broadly speaking, three categories or types of thermal insulation that are most widely used in existing homes; batts or blankets of mineral wool (this may be either fiberglass or rock wool) which comes in various thicknesses and in several different widths; loose fill, which comes in bags so that it can be poured between attic beams or blown into hollow wall cavities; and urea formaldehyde foam, which is pumped into hollow wall cavities with special equipment by franchised applicators.

Batts and blankets (batts are cut lengths that vary from four to eight feet in length, while blankets come in rolls) vary from about two to seven inches in thickness and are installed by placing the material between studs or roof rafters and then stapling the flanges on each side to the inside faces of these beams. They are available with or without a foil or heavy craft-paper vapor barrier on one side. Use insulating material with this barrier when installing insulation on attic floors or under roof rafters, where there previously was no insulation. Use the kind without a vapor barrier if there is some insulation in place with a vapor barrier on the inside (the barriers should face the warm side of the insulation in the winter). Batts or blankets are also used on the underside of floors that are over unheated crawl spaces.

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Loose-fill insulation comes in bags and may be either glass wool, rock wool, or cellulose fiber. Do-it-yourselfers use loose wool for pouring onto unfinished attic floors and into cavities where batts or blankets would be difficult to fit. Professional contractors use special equipment to blow this type of material into hollow walls through holes bored from the outside, as well as onto unfinished attic floors.

Cellulose fiber insulation is actually recycled paper or cardboard that has been shredded up. To make this organic material fire-resistant it must be treated chemically, but unfortunately conformance to the proper standards to insure permanent fire resistance is voluntary on the part of the manufacturer. The National Cellulose Insulation Manufacturers Association (NCIMA) has created its own standards and requires all members to conform to them, but there are still many producers who do not belong. Some experts still express doubts about how long the chemical treatment will last if the insulation is accidentally subjected to moisture, even after it is properly treated.

However, cellulose insulation is less expensive than mineral wool, and it is an efficient thermal barrier when properly applied, so it is growing in popularity. Homeowners considering this material should deal only with qualified contractors, and they should look for a label on the bag that indicates that the product meets federal specifications, or that the producer is a member of NCIMA.

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Foamed-in-place urea formaldehyde which is pumped in with special equipment is more expensive than mineral wool or cellulose, but it is usually more efficient than blown-in material of the same thickness. When properly applied it will also do a better job of filling cavities and openings in the walls. It is also moisture and fire resistant. However, it is important that a qualified contractor who will give a written guarantee be selected, because there have been reports of poor quality installation by contractors who lack experience with this material.

The easiest place to install insulation in any house that is already built is obviously on an unfinished attic floor. Insulation can then be put down by simply laying the material between the beams or joints (in the case of blankets or batts), or by pouring it between them (in the case of loose-fill, which comes in bags).

Attics that are to be finished and heated later on are normally insulated by applying blankets or batts to the overhead roof rafters instead. The insulation should be carried along the full length of each rafter from floor level up to the collar beams (the short horizontal beams that go across the top of the attic). If there are no collar beams, then 2 by 4's should be nailed up at ceiling height to span the sloping rafters. The insulation then goes across these collar beams, leaving an uninsulated space above them to allow for ventilation.

Ideally, the walls should have insulation rated at a minimum of R-13 (about 3½ inches of glass wool), but where the house is built with 2 by 4's framing instead of the usual 2 by 4's, then thicker R-19 is preferable. Outside walls should have been insulated during initial construction while the studs or framing members were still exposed, but in existing wools, insulation can still be added by blowing or pumping it in as described above. Either loose fill or foam is used, but both these jobs should be done by qualified contractors.

Although adding insulation in this manner is more expensive than it would be if done when the house was built, it is still worth the price in cold climates because of the steadily increasing fuel and energy costs that appear to be part of our continuing future.

Fluorescents light plants efficiently

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There's no need to let your pet fern or philodendron die for lack of light because you want to save energy.

The simplest thing, of course, is to move all your house plants over to the windows where they will get natural light. They won't fit? Attach shelves to the window frames and get a number of plants into the sun that way. Or hang them from ceiling hooks close to the windows. If you can afford to be extravagant, have a small greenhouse attached to the outside of your window.

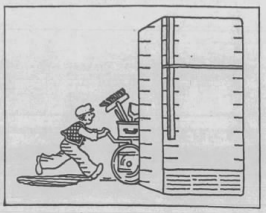
Even simpler to do is using multipurpose lights. Don't waste the benefits your plants might get from your usual light fixtures. Put a plant anywhere you have a lamp.

The best solution is to change all plant lighting from incandescent bulbs to fluorescent tubes. A fluorescent tube puts out more lumens (measures of light) than an incandescent tube of the same wattage. According to Con Edison, a 40-watt fluorescent tube gives out 3,100 lumens, compared to only 1,700 lumens for a 100-watt incandescent bulb. In other words, you get almost twice as much light for about half the energy use and cost of electricity. Mixing a cool white fluorescent tube with a warm white tube provides a better light range for the plant.

Say that you have a 3- by 10-foot arrangement of foliage plants requiring low light — philodendron, dracaena, Chinese evergreens. According to the spokesman for Duro-Test, manufacturers of plant lighting, the area could be sufficiently lighted either by a 150-watt incandescent bulb with a reflector, or by two 30-watt fluorescent tubes.

By using fluorescents in dark, out-of-the-way corners — a foyer, say — you can grow plants and still light up the dark. Charles Madden Pitch, who has written a number of books on house plants, says that you can grow a garden in a basement with a couple of 40-watt fluorescents. Even flowering plants, such as African violets, need only 15 to 20 watts per square foot if fluorescents are used.

Table lamps with circular fluorescent tubes are available if you don't like the looks of straight tubes. Whichever lighting you use, Pitch suggests you scatter white pebbles on the top of the soil to reflect light. He also points out that plants put against a white wall will benefit by reflection. All plant lights should have reflectors so light is not wasted.



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