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Keep cool without pricey AC

Whole-house fans and evaporative coolers can take the edge off summer's heat for just pennies an hour. But they're not for everyone or every climate.

By [Marilyn Lewis](#)

You might think your only options for a heat wave are air conditioning, fans or sweating it out. But a couple of old-school technologies could keep you cooler and cut your electricity bills at the same time.

There's always a catch, though, isn't there? These alternatives -- whole-house fans and evaporative coolers -- don't perform well in all climates. If your area is humid, you won't be able to use most evaporative coolers. If your skies stay warm at night or if you don't have an attic, don't try a whole-house fan.

But if nights are cool and you've got a hot attic, or if your air isn't already dripping with moisture, read on. You could save a bundle.

Not long ago, fans and evaporative coolers -- known with derisive affection as "swamp coolers" -- made homes livable in the hottest climates. "In the '60s, an evaporative cooler was all we had," recalls Arizona native John Kirby, an engineer with SRP, a Phoenix-area utility. "Most homes couldn't afford air conditioning until it got more reasonable."

But there were downsides, including noise and, with swamp coolers, lots of maintenance. Enter central air conditioning: Invisible and quiet, it became the high-status choice. In the U.S., 89% of homes built in 2006 had central air, says the National Association of Home Builders, compared with just 46% in 1976.

But air conditioners draw lots of power, so now, with both summer temperatures and electricity costs rising, these old energy misers deserve a second look with newer, quieter models that need less maintenance.

Evaporative coolers

These also are called "poor people's air conditioning" because they're so cheap to run. But what's wrong with that? They use up to 75% less energy than air conditioners, says Gerald Katz, an energy specialist with Colton (Calif.) Electric Utility.

Because they don't cool as effectively as air conditioning, in really hot climates their use is limited to late spring and early fall.

There are several types:

- **Rolling.** These budget coolers cost about \$300, installed, and run for as little as 2 cents an hour, depending on local electric rates. They are particularly effective in apartments and condos, where rooms are smaller and rules might prohibit anything in the windows.

- **Window.** Old coolers were big, noisy metal boxes that covered a window. Many new ones use high-quality plastic and sit outside, beneath a window, with an outlet through the window into the home. They cost about \$400, installed, and 5 to 7 cents an hour to operate. Kirby figures his evaporative cooler saves about \$140 over the four months he uses it yearly. But as it's old, he must regularly flush and clean it to prevent rust and calcium buildup. New models need only yearly maintenance.
- **Roof-mounted.** These high-end, low-maintenance coolers are installed on roofs and connected to ducts that direct cool air into the house and force hot air up and out. Some are built right into attics. They cost \$1,000 and up, installed, and up to 20 cents an hour to run. But compare that with \$5,000 to \$6,000 for new central air that costs 75 cents to \$1 an hour to run.

Save more money

Katz's municipally owned utility gives small evaporative coolers to some low-income customers. "I've seen bills drop by \$100 a month when we give people these," he says.

His job includes helping customers conserve electricity -- and money. "I see people paying \$150 a month for electricity in apartments and \$200 to \$300 or more in homes," he says. In summer, electricity use typically doubles, which tells him that air conditioning accounts for about half the bill.

You can count on your power bills to rise alongside summer's temperatures.

Evaporative coolers work by pulling fresh air over pads soaked in cold water. The air is chilled, cleansed and sent into the house on a cool breeze. You must open windows or doors while it's running so hot air can escape. If that's unsafe, consider an UpDuct, a pressure-operated damper (\$12 to \$15 where you buy evaporative coolers) installed in outside walls.

Continued: Making the decision

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Advanced systems -- two-stage evaporative coolers such as those made by AdobeAir and Davis Energy Group's [OASys](#) -- employ a pre-cooler to extend the product's usefulness into hotter and more-humid conditions.

Making the decision

Coolers add humidity, so they shine where humidity is low. How low? A [chart](#) at the California Energy Commission's site showing optimum conditions to help you decide. A [map](#) at the Washington State University site marks the best regions (typically from the Rockies westward).

Should you buy a new evaporative cooler? That depends on your bills, your weather and the efficiency of the system you've already got. You might purchase a portable unit on a trial basis. Find them at home-improvement centers and chains such as Sears and Wal-Mart. They often sell out in heat waves, so call around to locate one,

then check the store's return policy to ensure you could get a full refund. Learn how many days you have to return it and save your receipt. If the model you buy is noisy, try other brands.

Higher-end coolers require professional installation, so contact air-conditioning companies. They cost less than air conditioners and need no expensive professional maintenance, so providers are less motivated to carry them. You may have to phone around to find one.

Whole-house fans

Where nights are cooler, even during one or two seasons, a whole-house fan can whittle your electric bill. Their cost ranges from \$200 to \$350 or so for the fan itself up to \$1,000 or more if professionally installed along with attic venting. But it can shave 30% off your bill if you run it instead of air conditioning at night.

"At night you bring all this cool air into the house, then you close the house up in the day and you are living off the cool you got in the night," says Kirby, who used a whole-house fan while living in Missouri.

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You'll need an attic because the point of the fan is to cool it off. It fits into the ceiling, usually in a hallway, and sucks hot air up and out attic vents. It can be quite effective.

Manny Robledo, in sweltering San Dimas, Calif., uses a whole-house fan. Returning home after a hot day, "you turn this thing on, and in a matter of 15 minutes you cool the house," he says.

Comparing costs

Here's how to compare the cost of operating your air conditioner with an evaporative cooler or whole-house fan:

- Estimate how many hours a month you run air conditioning.
- Check the label on your air conditioner to see how many kilowatts it uses. The label may not say, but it will show the amps and volts used, so calculate the number of watts it consumes by multiplying the amps (quantity of energy used) by the volts (pressure at which the energy is delivered) on the label. Divide by 1,000 for kilowatts.
- Multiple the kilowatts used by the number of hours you run air conditioning each month to find the kilowatt-hours it consumes monthly.
- Next, see what it's costing you to run the air conditioner by consulting your electric bill to find the cost of a kilowatt-hour of electricity. Multiple the cost by the number you arrived at for kilowatt-hours.
- Do the same for the new appliance.

If in doubt, remember: The savings from an energy-efficient appliance will increase over time. "The way utility costs are rising, savings could potentially grow," notes Katz, of Colton Electric Utility.

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