Energy Myths

Myth: Energy efficiency and energy conservation are the same thing.

Well-intentioned information campaigns during the oil crisis of the 1970s created a lot of confusion about how to save energy and even about how to talk about saving energy. Energy efficiency means getting the same job done while using less energy. This could be lighting a room, cooling a house, or refrigerating some vegetables. The activities made possible by using energy - such as illumination, comfort, or food preservation - are sometimes called energy services.

Energy conservation, on the other hand, means reducing the level of services, such as reducing lighting or comfort, or turning up the temperature of your refrigerator. Reducing service levels (conservation) does not necessarily mean sacrifice. For example, many spaces are over lit by current-day standards; many water heater temperatures are set too high, and so on. Consumers have the option of improving energy efficiency (such as through the purchase of more efficient appliances) and/or reducing service levels, but lowering the quality of life is not a prerequisite for reducing energy demand.

Myth: Duct tape is good for sealing ducts.

Unfortunately, laboratory research has concluded that duct tape has very low durability when used to seal ducts. On new installations, tape often falls off due to poor surface preparation, because ducts tend to be installed in dirty conditions and locations. On older systems, the tape falls off as it ages and the adhesive dries out and wrinkles. Instead of duct tape, seal ducts with mastic, a flexible cement specifically for sealing ductwork.

Myth: When my appliance is turned off, it’s off.

We have found that most devices continue to consume power when they are switched off, sometimes as much power as when they are on! A surprisingly large number of electrical products - from air conditioners to VCRs - cannot be switched completely off without unplugging the device. These products draw power 24 hours a day, often without the knowledge of the consumer. We call this power consumption standby power, or phantom energy use. One easy remedy for this is to unplug appliances when you are out of the house - easily done if many items are grouped together on one power strip.
Myth: Leaving lights, computers, and other appliances on uses less energy than turning them off and on repeatedly, and makes them last longer.

The small surge of power created when some devices are turned on is vastly smaller than the energy used by running the device when it is not needed. While it used to be the case that cycling appliances and lighting on and off significantly reduced their useful lifetimes, these problems have been largely overcome through better design. The rule of thumb today is: Turn off the lights when you leave the room, and use the power-management software that comes with your computer and monitor.

Myth: Insulating the ceiling will just cause more heat to leak out of the windows.

Adding insulation to one part of a home will not increase the “pressure” on heat losses through other parts. However, it is true that poorly insulated areas will be the major losers of heat, and that they often merit attention before improving already well-insulated parts of the home. To best insulate a home, large and small leaks must be addressed.

Myth: Electric heating is more efficient than fuel-based heating.

It is true that all, or almost all, of the electricity that goes into an electric heater is transformed to useful heat in your home. However, making electricity is an inefficient process, with as much as two-thirds of the input energy (coal, natural gas, and so on) being lost in the process. This is why electricity is typically so much more expensive for the consumer than direct fuels. Do not forget, though, that combustion appliances in the home must be installed and vented properly and must always have a continuous, reliable source of makeup air.

Myth: Buying an energy efficient air conditioner or furnace will automatically reduce my energy bill.

This is true to some extent, but you will not realize all of the possible savings if the equipment is not sized or installed properly. Studies have shown that typical air conditioner and duct systems are improperly installed, wasting one-third or more of the energy used by the air conditioner. New and replacement equipment (and ducts) need to be properly designed and installed to realize all the possible savings. The same caveats about proper installation hold true for insulation, windows, and many other energy efficiency upgrades.