How To Save The Most Money On Your Electric & Gas Bills For The Least Cost

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Compliments of Energy Improvements, Inc.
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Introduction

Whether your passion is to save the environment or to save your money, one of the simplest steps to take is cutting our personal energy use at home. Although it may not seem like much, this can save the average family hundreds, even thousands of dollars.

According to the U.S. Energy Information Administration, as of November 2009 the average price per kilowatt hour (kwh) in Texas was 12.37 cents (for commercial meters it averages 13.31 cents/kwh (source http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_a.html). That doesn't sound like much, does it? Just remember those few cents are what add up to hundreds of dollars a month and thousands of dollars each year.

To know why it helps to understand just what a kilowatt-hour is. Watts are simply how we measure the amount energy it takes to use an electric item, such as an air conditioner or a light bulb. As you walk around your home you'll probably find labels on your appliances that show watts, volts and amps. If your toaster or electric drill or computer doesn't show watts, don't worry. Just multiply the volts and amps on the label by 120 watts… the standard household current. So 10 amps x 120 = 1200 watts.

That's how you figure how much energy drain all those conveniences mean in your life. The electric company must calculate the amount you use over a whole month, so they measure in watt-hours… and *kilo* simply means 1000 of these watt-hours. So if you have a window air conditioner that pulls 1000 watts, and you run it for an hour, you've used one kilowatt hour. If you leave it running continually, as many people do, that's 744 kilowatt hours -- or over $92! -- in just one month.

Now let's say you left a single 100 watt light bulb on all the time, could be for security or an aquarium, or maybe you just forgot to turn it off the last time you were in the shed. That's 74 kilowatt-hours, or over $9, just for one lightbulb (how many more do you have?)! Bet you'll remember to turn it off next time!

Just by comparison, a CFL lightbulb (one of the newer, curled incandescent bulbs) will give you the same amount of light for around 25 watts… so if you leave one of these on in the shed on it would save you almost $7.00 every month. That's $84 a year in your pocket! Suddenly spending an extra few bucks to buy one of these CFL lightbulbs doesn't seem like such a big deal, does it!?

And that's how it works with energy savings. Status quo just leaves things as they are… and your money keeps being sucked away, month after month, year after year. Changing a lightbulb is a small thing, but it gets results. Change out all your bulbs and you'll get even greater results. There are other low or no cost things you can do…and all of them will save you some money. There are some that cost more upfront, but are so good at saving BIG money that the government will even help pay for them! In this special report, we're going to look at both, the little minor things you can do, and the best ones you can do for major savings.

Essentially, as we've seen, if you spend pennies you'll save pennies… but those pennies add up! Here are some other ideas to save you some more.

A couple of key points: Since electric rates vary all over the country, individual circumstances (age of home, age of central air, climate, etc.) and usage habits are so different, instead of talking in terms of dollars saved we'll talk about how much energy savings each of these methods can mean in an average home. People who live in milder climates can generally see a higher percentage of savings than people who live in more severe climates. Also, while there are lots of ways to save incremental amounts of energy, we've listed ones we feel give you the best overall savings in comparison to the purchasing cost.

Low Cost Energy Savings

Weatherstrip your windows and doors. Use silicone or foam caulking to fill in other gaps as well. Sounds simple so why heat and cool the outside air?

Remember to set your thermostat at 68°F in the winter (78°F (26°C) in the summer) while you're home and awake, and lower during the day or when you're sleeping (higher in summer). Many experts recommend setting it back as much as 10° - 15° F… but most people find that much of a heating/cooling swing to be to far outside their comfort zone! For each degree you setback the temperature (for at least eight hours), you can reduce your electric usage approximately 1%, so turning back the dial even a little pays!

You can adjust any thermostat manually, however most people won't do this consistently. If you buy a programmable thermostat, it will never forget to turn the system on or off. Plus, you're home will already be up to temperature when you wake up in the morning!

White shades, drapery, or blinds reflect heat away from the house. Close them on the south- and west-facing windows during the day to cut down on heat buildup.

Install insulated draperies throughout your house, using them to let sun in or keep it out (depending on the season)

Install a low-flow aerator on all your faucets and showerheads. Not only does it save water, but it helps you reduce your hot water use, saving on electricity.

Clean your refrigerator coils… just like changing the AC filter, it takes less energy when they're clean. While you're at it, if you have a chest freezer, clean it too… and you might ask yourself, "Do I really need this freezer?" That one extra appliance probably uses more electricity than the savings you anticipate on getting from bulk food buys.

Make a note on your calendar to change the filter on your central heat and air unit every 30 days. Go ahead and stock a few extra filters ahead of time.

Install a timer and blanket on your water heater. Doesn't seem like much, but it can really add up to savings. By adding insulation around your heater, you are helping keep the heat inside the water heater reducing the need for the heater to turn on to heat your water.

While you're at it, turn down your water heater to 120°-130° F or so. This is more than sufficient for hot showers and to kill bacteria in the dishwasher and washing machine. While you're at it, hang up your laundry instead of using your dryer and save even more!

Make sure everything you buy that's electric is Energy Star rated (http://www.energystar.gov). The Energy Star seal means the appliance has been rated as saving energy over older style equipment, in some cases as much as 50%.

Kill the vampires. All those convenient "instant on" televisions and computers; those ubiquitous digital clocks on the microwave, VCR and game console; and those phone chargers and other devices with little LED lights that stay on all the time… unplug them! Combined they can nickel and dime you up to 5 to 8 % of your electrical use. A single plasma TV in standby mode can cost $160 a year… just turning them off doesn't stop the energy drain (the only way to stop the drain is to unplug them).

By some estimates, this growing problem accounts for as much as 68 billion kilowatt-hours… about 5% of our total electrical output or about 37 power plants worth. So think dependency on foreign oil (4 million barrels wasted) or carbon dioxide in the atmosphere (about 97 billion pounds)… and unplug them from the wall!

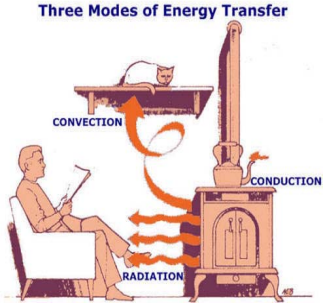
Larger investments for major savings

If spending pennies saves pennies… does spending more result in significantly greater savings? Yes, absolutely. By investing in your home's energy efficiency, you can save hundreds, even thousands of dollars. Most items last for years, some for decades. However, how you spend the money becomes much more important; make sure you get the most "bang for your buck."

There are several major investments that can add value and decrease your energy use. They basically fall into three areas: 1) Energy creation, such as solar and wind devices 2) Energy management, such as whole house amperage and current modulators, and 3) reducing heat loss (or gain) through radiant heat barriers.

Since most alternative energy sources are still years from high efficiency, and energy modulation is an advanced form of energy control, we're going to keep our focus on those steps that can bring you the greatest results in reducing radiant heat losses in winter (or gains in summer). To find the greatest value for your money -- the greatest energy savings return on investment -- it is important to understand how energy is lost and gained in your home.

Understanding Energy Loss & Gain



Heat is transferred through ***conduction, convection and radiation***. **Conduction** works through direct contact only. Some materials conduct heat better than others. For example, glass is an excellent conductor of heat, so are metals, but wood is not nearly as good. When you touch a cold window or a hot cup of coffee, heat is *conducted* directly to your skin very quickly. If a kid touches their tongue to a fencepost on a cold day it may be

cool, but their tongue won't freeze to it. We all know what will happen if they do this to a lamppost! That's the power of conduction.

The heating and air unit in your home uses **convection** to make its job easier. We all learned how “heat rises” as little children, seeing vapor rise off that cup of coffee, watching smoke go up a chimney or wiggly heat ripples rising off a hot sidewalk. As warm air rises it cools and falls again; your furnace reheats it and it rises again. This creates a circular effect known as *convection*. Eventually all of the air in the house (assuming there are no leaks or radiant heat losses) will warm up. On a bigger scale, the single major cause of all of our weather patterns are convection currents, both in the atmosphere and in the oceans.

Radiant heat is totally different from either conduction or convection. Radiant energy moves through waves, either invisible (like microwaves) or visible (like light waves). When these waves strike an object, such as your hand next to a light bulb, it heats that object. Radiant energy is what heats the cup of coffee in your microwave. Maybe you’ve used shiny metal sun reflectors to cook a hotdog, or focused the sun through a magnifying glass to start a campfire. If you think about it, the whole Earth is heated entirely by *radiation* from the Sun. Since space is vacuum, nothing exists to conduct heat and there is no “up” or "down" for convection currents, so the only way heat is transferred through space is by radiation.

Radiant heat also flows naturally from a warmer area to a cooler area, so in winter the heat in your home moves towards the outside, where the temperature is colder. In the summer, the heat outside is drawn inside your home, where your AC is working to keep your living space cool.

We're not talking about warm *air* that’s moving in and out, although you could have air leaking through unsealed cracks, open doors and other gaps as well. *Radiant heat* is like money that's being beamed through your unheated attic, garage, walls, floors, windows and basement. Radiant heat is the primary enemy frustrating your best efforts to stay comfortable in your home, forcing your heating and air system to work harder to replace the heat lost, or work overtime to keep up with high temperatures during the summer. Radiant heat drain affects your energy bill more than anything else.

Bulk Insulators & Older Technologies

The use of bulk insulators are the most basic and oldest solution to resisting radiant heat loss and gain. Even today, many consider bulk insulators the "work horse" of the industry. Bulk insulators use materials that "trap" pockets of air or gas that essentially slow down heat loss or gain. Just as with bulky winter clothes, the more bulk you add, the better it works.

Insulation such as fiberglass, blown cellulose or expanded polystyrene are all considered "bulk" insulators, primarily those that use space and trapped air or other gases to insulate. These older forms of insulation are rated using a special calculation known as the "R" value. The formula for arriving at the "R" value is a little technical, but the important thing to remember is the higher the number the more bulk insulators resist heat flow.

For example, blown-in cellulose has an "R" value of R-3.70 per inch; expanded polystyrene is R-4.0 per inch; and common rolls of fiberglass insulation have an "R" value of R-3.14 per inch.

According to the Department of Energy, the average home in Texas should have between R-30 and R-60 insulation in the attic alone (source: http://www1.eere.energy.gov/consumer/tips/insulation.html) That equates to roughly 10"-20" of insulation, depending on the type. No wonder this category is

referred to as "bulk" insulation! The average home requires about $2,500 - $5,500 and as much as $10,000 to minimally insulate the attic and crawlspace areas. You can find out how much the government recommends using this simple calculator at http://www.ornl.gov/~roofs/Zip/ZipHome.html.

It is important, regardless of which bulk insulation product you install in your attic, walls, basement or under your floors, that you have an appropriate vapor barrier or vapor diffusion retarder (VDR) between the insulation and your home. On roll fiberglass insulation, this is the "paper" side, and it should always face the inside of the house. VDRs reduce the rate moisture moves through the material. Without this, moisture issues will plague the home (excessive dryness or dampness and mold issues).

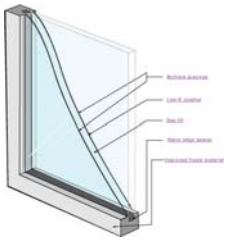
Also, these bulk insulators themselves are negatively affected by changes in humidity (moisture levels). As little as 1-1/2% change in the moisture content of fiberglass insulation can mean a 36% decrease in performance (source: HVAC Manual 10.6; McGraw-Hill).

In recent years, more scientists and industry specialists have recognized that most bulk insulators have a limited effective lifespan. The LTTR (Long-Term Thermal Resistance) rating method is now being used along with the older "R" value formula, but the LTTR is only designed to rate the decline in bulk insulators to resist radiant heat loss (or gain) over the first 8 years or so of their life… not much value when the average home has a 50 to 100 year life expectancy! Many professionals in the industry are still struggling with how to accurately project certain bulk insulator's declining in efficiency. (http://www.professionalroofing.net/archives/past/feb02/polyisofeature.asp)

Some of the bulk insulators have also come under attack in recent years because of their use of potentially hazardous or environmentally unfriendly gases and other components, such as chlorofluorocarbons (CFC) or hydrochlorofluorocarbons (HFCs). Many are also highly-flammable, and can actually increase the severity of fires in some homes.

Insulated Windows and Doors

Double pane or triple pane windows are another type of "bulk" insulator. Windows are often the least insulated part of your home. We all know the feeling of touching a cold window, or breathing on a cold window and seeing our breath condensate. In addition to radiant heat loss, single pane windows are tremendous sources of conductive heat loss (inside air is cooled simply by contact with them).



Double pane windows have a sealed airspace (sometimes filled with krypton, argon or other inert gases) that provides a layer of insulation. Triple-pane windows have two of these, with an inside, outside and middle of glass. The extra pane of glass and two air spaces in between provides more insulation than regular double pane windows, and so, even though each one can cost $50-$200 more than a comparable double pane window, triple-pane windows have gained popularity among homeowners trying to reduce their electric bill.

Because they are considered "bulk" insulators, using airspace (or inert gases) to provide their radiant barrier, windows are also rated with R-values, but typically have a miniscule value of around R-1.0 to R-4.0. Windows for an average house can range from around $3000 to as high as $10,000 or more. Some newer, more expensive triple-pane windows usually have higher ratings, around R-9, but double check to make sure the added expense is really providing more insulation.

Insulated doors are constructed with a simple foam core that creates a better heat barrier than a solid wood, glass or composite door. Part of any home insulation should take into account insulated doors and windows, however, don't forget to seal the cracks around them at the same time with caulk and

weather-stripping! Often, the cracks and crevices behind the trim can create more energy loss than the window or door itself!

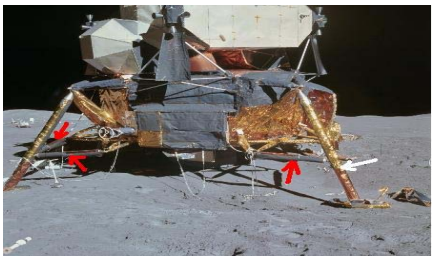
Why NASA found common methods of insulation insufficient

Bulk insulation technologies haven't really changed significantly in hundreds of years. Newer materials may continue to be developed, but essentially the technology of insulation through bulk -- using trapped air or gas pockets -- is centuries old. Straw, snow, peat, sod, and hundreds of other materials have been used over the years, and they all operate on the same principle as fiberglass, cellulose, double pane glass and other current materials: the more bulk you pile on, the more insulating ability you get. These are all proven and valid methods of reducing your energy use. Just as changing out light bulbs or turning down your water heater will increase your energy savings, taking steps to insulate your home will help you decrease energy use, and add to your savings even more.

However, when NASA was contemplating the extremes of outer space as they planned the first lunar landing, they found none of these methods offered the radiant heat barrier that they needed, especially when considering the vast amount of bulk materials that would be required! The bright side of the moon, for example, can reach 260°Fahrenheit! More than hot enough to boil the astronauts alive. The dark side of the moon gets down to -280° Fahrenheit… over a 500° swings in temperatures! Space itself gets much, much colder -- and hotter. There was no way older, traditional bulk insulators could ever protect the astronauts, even inside their space capsule… not to mention when they were outside the capsule doing repairs on space walks or jumping around on the moon's surface. They would have needed over seven FEET of conventional insulation materials for their spacecraft! Not to mention, how do you even make a seven foot thick glove!? NASA clearly needed a newer, superior technology.

NASA scientists began one of their most comprehensive research and development projects ever completed to shield their astronauts from radiant heat gain and loss in space.

The NASA Solution: An Ultra-Thin, Super-Durable Radiant Energy Film.



You may have seen color images of the lunar module with what appears to be gold foil around the base. That gold foil is actually a NASA-created material known as **Radiant Heat Barrier** that uses space-age technology and manufacturing processes.

Cruder forms of radiant barriers were originally developed in the 1920s, but they were about as durable as plain aluminum foil. It wasn't until Team Wright Labs (of Wright-Patterson Air Force Base), headed by Clark E. Beck, PE, that the first modern radiant barrier technology was created for NASA and the space program using durable, 99.5% pure aluminum sheets laminated to protect them from tearing and other damage.

Now, instead of having to bulk insulate the space capsules and astronauts' spacesuits, NASA had a thin but tough, reflective aluminum radiant barrier that not only kept dangerous heat (and other radiation) out, but kept the astronauts' own body heat reflected in, to keep them warm,

NASA's Radiant Heat Barrier had a mirror-like surface that kept almost 97 percent of ALL radiant energy from penetrating their spacesuits. And since the material itself is thinner than paper (1000 square foot roll weighs around 17 pounds), there was essentially NO additional weight for the astronauts to lug around.

NASA further refined the material by adding microscopic holes in the radiant barrier itself. These allowed body moisture to escape, so the astronauts didn't build up sweat and condensation inside their suits. You may remember, one of the key elements of effective blocking heat loss and gain in the home is having a vapor seal… in adding this feature, NASA solved another key home insulation problem. By making the Radiant Barrier film permeable, it could be laid over existing bulk insulation and still allow moisture control in the home.

The Radiant Barrier film has provided key protection in every NASA mission, including the Gemini spacecraft, Apollo command and lunar modules, the Space Shuttle missions, the International Space Station and even unmanned probes like the Mars mission, protecting vital electronic components from the extreme temperatures. With this technology, we have witnessed environmental control systems so effective that the astronauts are often shown in shirt sleeves, going about their duties inches away from temperatures -200° F and lower. Without this thin, durable Radiant Heat Barrier, it's been said there would never have been a space program at all.

Like most NASA-developed engineering breakthroughs, **NASA's Radiant Heat Barrier** technology is now commercially produced, and today it's saving energy and lives on Earth. It not only allows homes and offices with affordable energy conservation, it's been used to make lightweight, non-breakable thermos bottles; popular, reflective windshield covers to lower heat in automobiles; and keeps ice cream and other refrigerated trucks insulated efficiently without adding significant weight -- and without lowering gas mileage like adding hundreds of pounds of bulk insulation. It protects firefighters inside their fire suits and with "fire shelters" they can carry in their pocket, keeps campers and hikers warm in emergencies with lightweight "space blankets"; also protects NASCAR drivers from engine fires… and the list goes on and on.

Using Original Radiant Heat Barrier For Major Home Energy Savings

Obviously, there are thousands of industrial and manufacturing uses for a product this unique. But what about making it possible for homeowners to take advantage of these incredible energy savings in their homes? **Energy Improvement Shield™** meets 100% of NASA's specifications as a superior insulating product AND has passed stringent independent testing by the primary organization that establishes zoning board standards used nationwide: ASTM International, the leading international engineering association for testing and materials. Not only that, **Energy Improvement Shield** also meets or exceeds the standards of other national and regional testing organizations including:

- United States Testing Company
- Oak Ridge National Laboratory
- Building Officials and Code Administrators
- International Conference of Building Officials
- Southern Building Code Congress International
- Texas A&M University
- State of California
- Tennessee Valley Authority

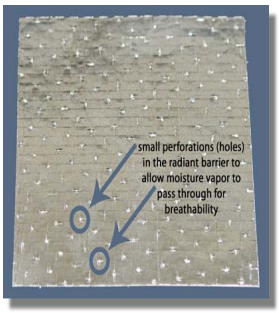
These extensive testing processes have proven the high efficiency, with which this original product reflects heat, is permeable to moisture, retards burning and is tough and puncture resistant. By melding two sheets of 99.5 percent industrial grade aluminum with THREE laminated layers, this two-sided reflector film is so durable it can even be walked on without damage.

Energy Improvements, Inc. pioneered installation of our radiant barrier in homes and businesses almost 21 years ago, and ***no other company has been installing our NASA-Specification radiant barrier for a longer time.***

We have installed millions of square feet of the Energy Improvement Shield™ Radiant Barrier in thousands of homes across the country… longer than any other company in America.

How Energy Improvement Shield Blocks Up To 97% Of Your Home's Radiant Heat

During winter, 50-75% of heat loss through your ceiling is radiant, as is 65-80% of the heat you lose through walls. Windows are even higher. It can be worse in the summer, when up to 93% of the heat gain in your home is radiant. Traditional bulk insulation -- increasingly facing age and moisture-related efficiency losses, fire and chemical hazards and other issues -- relies on air or gas pockets and can only essentially "slow down" radiant energy, while the Energy Improvement Shield technology actually reflects it, pushing it back! **By reflecting up to 97% of all radiant heat loss or heat gain in your home, only Energy Improvement Shield™ ALONE can reduce as much as 30% to 50% off your yearly gas and electric costs.**



Because the **Energy Improvement Shield™ Radiant Barrier** is reflective on both sides, in the wintertime it blocks the heat radiating from inside your home and reflects them back into your living area, instead of allowing that heat to simply escape. Plus, it is perforated with microscopic holes so moisture can pass through and not create a moisture barrier over your existing insulation. Energy Improvement Shield has been proven to have **NO** adverse effect on your existing insulation or any structural component of your home. In fact, some studies indicate it may actually extend the life of certain components, such as rolled or blown bulk insulation, roofing and other materials, simply by keeping attic heat levels lower on average.

Energy Improvement Shield's pure aluminum radiant barrier is totally unaffected by humidity or age, and **will continue to resist up to 97% of all radiant heat for the life of your home,** no matter how humid it may become or how long you have it. There is no electrical (or plumbing) connection to break down. In fact, **Energy Improvements, Inc.** doesn't just warranty for defects or installation and workmanship…

The Affordable Energy Improvement Shield™ Radiant Barrier Film Is Guaranteed For Life *Against Weather, Water, Fire Or Aging Damage.*

Energy Improvements, Inc. is so confident of the performance and durability of our product that the warranty is transferable and willable one time to the next homeowner against any installation defects AND weather, water fire or aging. It's simple, really, if the Radiant Barrier is affected or damaged Energy Improvement will replace it at no cost to you.

Consumer Notice: Consumers Should Protect Themselves & Know The Difference

Although the NASA specifications are clear, phrases such as "energy shield", "reflective barrier", "heat shield" and others can be found referring to dozens of different kinds of products, many which are not true radiant barriers at all. There have been look-alikes and similarly-named products made of all sorts of different materials -- ***even one that's nothing more than shiny, reflective paint!***

Since so many companies have begun offering different kinds of products using catch phrases it's important for consumers to be able to discern between them. Remember, although some of these other products may provide some level of energy savings, only ONE type of product meets strict NASA specifications. **Energy Improvement Shield™ Radiant Barrier** is the identical commercially-produced product, providing you the **maximum savings for your money.**

Fortunately, consumers can judge the performance of these products on specific, proven tests by independent organizations such as those above. If a company will not provide the volume of supportive research you request, it is probably because they cannot honestly do so.

Remember, when choosing a company to perform your radiant barrier shield installation, remember that you are making an investment for your home and for your future. The decision should not be made lightly! Making this home improvement can increase the energy efficiency of your home as well as its value; provide you with greater comfort year-round and significant savings on your monthly utility bills. Here are 16 important things to consider before agreeing to have **any** company install any product which is promoted as a "radiant barrier" in your home:

1. How Long Has The Installer Been In Business? (And, Is This Their MAIN Business)?

This is a pretty basic question for any contractor you are considering for work or installation at your home. This is true whether their business is home repairs and remodeling, plumbing, roofing or air conditioning work, or for installation and servicing of energy management products. Unfortunately, most radiant barrier companies don't have the best track record as far as longevity. In fact, most close up shop within the first five years, and only 2% to 4 % survive ten years.

An often cited "red flag" consumers report to the Better Business Bureau are "super discount" sales by these shady contractors. According to consumer experts, if a price seems too good to be true or radically less than similar companies, it's a good sign the company is in trouble or about to be soon. Just as in the children's game "musical chairs," when these companies do go out of business -- they leave many paid customers standing out in the cold, some never even getting what they paid for and all of them out of luck as far as service or warranty needs. There is just no good reason to take a chance on a newer company that statistically isn't likely to even be around in a couple of years. There's a level of comfort and trust that comes from doing business with a company that has been established for a long time … they know what they're doing and aren't in business for the quick buck.

A reputable company is in business for the long haul. They also have the infrastructure -- service, workmanship, warranties, and referral programs -- to do the job right and back their work. This is the kind of strength one would expect from the nation's oldest and most respected companies.

Energy Improvements, Inc. has been in business since 1989—that's over 20 years -- and is the oldest

radiant barrier company in the United States. **Energy Improvements, Inc.** has been continuously improving homes since the radiant barrier technology first became commercially available, and **we ONLY use Energy Improvement Shield™ Radiant Barrier film that meets or exceeds NASA standards.**

Also, many of these start-ups simply added some type of generic "radiant barrier" product as an add-on or sideline product to supplement services already offered. For example, a painting contractor may add in some type of reflective paint as an added item he can sell to his customers, or a electrician may add some other type of product he knows he can install, as a way to boost his sales. Instead of trying to cash in on the radiant barrier trend by adding it to their product line as an afterthought, the **Energy Improvements, Inc.** team has specialized in this new technology from the company's beginning in 1989, and are considered authorities on the product and its benefits.

Consumer Alert:
Some companies or divisions of companies have been quoted as claiming to have been doing installations for 30 or even 40 years. This is not only not true, but impossible, as true NASA Radiant Barrier technology was not been commercially available until the mid-1980s.

2. Is The Company's Product A Spray Paint Or A True Radiant Foil Barrier?

We've mentioned reflective spray paint, and because of how cheaply it can be done, many companies have added it into their offerings and advertised it heavily. However, in the case of spray paint, it is especially important for consumers to be aware and not deceived.

Spraying or rolling a coating directly onto the underside of the roof decking is not the same as having a professionally installed commercial-grade **Energy Improvement Shield™ Radiant Barrier Film,** originally created by NASA to fight the 500°+ temperature swings in outer space.

Consumer Alert:
NO reflective spray paint has ever met NASA specifications as a radiant barrier, and NASA has NOT approved ANY spray paint technology for safe and effective use as a radiant barrier.

Although manufacturers of the spray coatings claim that they effectively block radiant heat, studies have shown that **these "quick fix" spray paints may *actually block as little as 10% percent of radiant heat!*** Plus, the way it is most often applied (sprayed directly on roof rafters and roof decking, or on floor joists) actually increases the likelihood that it will conduct MORE heat into the home than it reflects! With no air space between the materials of the home and the metallic coating, these paints absorbs the sun's heat and conducts it into the attic. Unfortunately, you cannot spray on a radiant barrier and expect it to have much of an impact.

Even worse, some studies in the roofing industry have indicated ***that spraying a reflective paint directly on your rafters and roof decking CAN overheat your roofing material, shortening the life dramatically of standard asphalt-based shingles.***

Energy Improvements, Inc. was offered the opportunity to add these cheap spray "barriers" as a secondary product, and they are extremely profitable and require very little stability or overhead to sell. After doing our own research, we decided to avoid being involved in the knockoff or secondary market products and questionable practices entirely. We continue to provide ONLY **Energy Improvement Shield™ Radiant Heat Film** meeting NASA-Standards, and it is NOT a spray—it's a shield. (As one expert put it, "If NASA could had developed a paint that worked as a heat shield, they would have… but they couldn't!")

ONLY original NASA space technology meets ALL the requirements of the ASTM International code for installation and use of safe and effective radiant barrier systems.

For example, to qualify as a true "radiant barrier", a product must have a heat emission rating of no more than 6 percent according to ASTM International (ASTM C 1371). The very best spray barrier coatings have a staggering 25 percent rating, while **the affordable Energy Improvement Shield™ Radiant Barrier Film has a heat emission rating of ONLY 3 -- one of the lowest heat emission ratings ANY product currently available!**

Also, NO spray coatings have received Energy Star ratings OR qualified for ANY federal tax credits, because the government recognizes these paints contribute nothing that qualifies for true energy savings. **(You CAN qualify for up to $1500 tax credit with Energy Improvement Shield™)**

Ultimately, no matter how much a bargain basement price you may be quoted, cheap, reflective paint coating is much less effective than the foil barrier, does NOT qualify for the homeowner's tax rebate credit, is NOT Energy Star-rated, and won't result in a 30 to 50 percent reduction in your yearly gas and electric costs. Also, spray coatings must be re-applied every few years, while the affordable **Energy Improvement Shield™ Radiant Barrier** is maintenance-free and warranted for LIFE. Once it's installed, you can forget about it … but you will be reminded every month when your surprisingly low gas and electric bill arrives!

3. What Type Of Installation Does The Company Perform? Rafter Or Ceiling Joist?

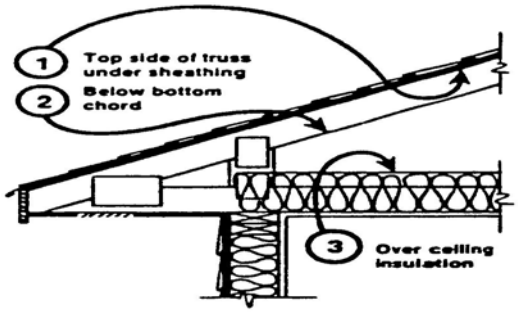


Figure 2.
Typical attic section with three possible locations for a radiant barrier.

Many people feel rafters are the only possible place to install a radiant barrier. This has come from heavy marketing by spray paint companies (since they can only effectively spray onto the rafters and wood surfaces). Fortunately, there have actually been many tests and studies conducted to determine which application is best. Although both methods have been proven to reduce monthly energy bills, the ceiling joist installation (over existing bulk insulation) has proved to be the far superior and result in significantly greater energy savings.

Since the affordable **Energy Improvement Shield™ Radiant Heat Film** meets or exceeds NASA Standards, and is so tough and durable, we recommend installing directly over your bulk insulation. We can install it either way, but there are several good reasons for simply installing directly over your insulation rather than to the rafters:

- It works equally well in winter and summer. If the barrier is applied to the rafters, it will not reflect any heat back into the home during the winter months, thus sacrificing comfort and increasing the workload for your heater.

- It provides **fire barrier protection** as well as an energy barrier. The fire safety benefits are lost when the barrier is applied to the rafters. Over the past 20 years, **Energy Improvements, Inc.** has had at least seven customers experience house fires. In every case, the firemen and insurance adjusters have been amazed at how the **Energy Improvement Shield™** kept the flash point down and slowed the fire, saving homes and lives.

- It's been proven by agencies such as Reflective Insulation Manufacturers Association (RIMA) that if a thermal seal is created over the living area (laid on top of the ceiling joists/insulation) versus the attic area (secured to the rafters), the energy savings will be much greater.

Consumer Alert:
Reflective Spray Paint May Damage Standard Asphalt Roofing Shingles.

- A high percentage of shingle warranties may be voided when a barrier is attached to the rafters. The reason for this is largely the result of spray paint coatings that trap summer heat between the roof and the barrier and can reduce the life of the shingles by five to seven years. Unfortunately, one bad apple spoils the bunch, and even though true radiant barriers leave airflow space between the rafters, if you insist on having it attached there instead of over your bulk insulation, you may void the shingle warranty. We know of NO shingle manufacturer that feels the **Energy Improvement Shield™ Radiant Barrier Film** affects their product when applied over existing bulk insulation.

- Finally, when a radiant barrier is installed to the rafters of a home, it takes 30 to 50 percent more material, as well as additional labor. This translates into a much higher cost for the homeowner... without any additional energy savings benefits.

4. Is The Company's Product Energy Star Rated?

It's extremely important to research the quality of the radiant barrier product you are installing in your home. NO spray paint is Energy Star rated, and not all foil-type barriers even receive this important government rating. **Energy Improvement Shield™ IS Fully Energy Star Rated,** and has been shown to be the highest quality radiant barrier available, based on ASTM International and many other independent testing authorities results.

Consumer Alert:
Many products currently being sold are not able to qualify for the U.S. Government's Energy Star Ratings, designating products which offer true energy savings for the consumer.

5. Does The Company's Product Qualify For The $1500 Energy Tax Credit?

Certain other foil-type barrier products may in some cases qualify for the federal tax rebate, which is 30 percent of the product purchase price up to $1,500, even though they may not perform as well as the **Energy Improvement Shield™ Radiant Barrier Film**. As of this report NONE of the metallic spray paint-style barrier products have ever qualified for this tax credit—the main qualification being the Energy Star rating. This rebate was passed on February 17, 2009 as part of the American Recovery and Reinvestment Act (www.recovery.gov). According to guidelines established by Congress, the **Energy Improvement Shield™ qualifies for the tax credit.**

Consumer Alert:
Be aware of potentially fraudulent misrepresentation regarding Federal Tax Credits. Many energy products, including reflective spray paints, DO NOT qualify for Federal Tax Credits without adding blown insulation into the attic of the home, creating unnecessary additional costs to unsuspecting homeowners.

6. What Kind Of Guarantee Or Warranty Comes With The Product And Installation?

Even though the company you choose can't really control or guarantee the amount of money you'll save, it should be able to stand behind the quality of the product itself and the workmanship of the installation.

With a lifetime warranty on the barrier and the installation, **Energy Improvements, Inc.** stands behind its product 100 percent. The warranty states that "Energy Improvements, Inc. warrantees **Energy Improvement Shield™** for the life of the home, and our warranty is transferable and willable one time to the next homeowner against any installation effects, and against weather, water, fire or aging damage. Any affected or damaged product will be replaced at no cost." The **Energy Improvement Shield™** also comes with a manufacturer's certificate that shows it meets all the requirements of the International Energy Conservation Code and ASTM International.

As of this writing, the company has only had to replace **Energy Improvement Shield™** in homes that were damaged by fire or flooding. This is an impressive track record.

Consumer Alert:

Be aware of any company that offers an "energy savings guarantee." Even though the Energy Improvement Shield™ Radiant Barrier Film has been documented through independent testing to slash energy bills up to 55 percent, your results will be totally unique. It's just common sense that actual energy savings, comfort, and reduced dependence on the HVAC system vary greatly from home to home. There are too many variables to guarantee a homeowner a specific amount of energy savings, and only unscrupulous companies would use this hard-sales approach.

7. Does The Company Have General Liability Insurance? Are They Bonded?

It goes without saying that you should always ask any company you contract to provide you with documentation that shows they have adequate insurance and bonding to protect your family and your home. Some companies self-insure, have no insurance, or lack adequate coverage. All three of these scenarios can present huge problems if an accident occurs. Protecting homeowners' property is of utmost importance to **Energy Improvements, Inc.** To prove it, the company holds a **$2 million general liability insurance policy that covers up to $1 million of damage on a single property.**

8. Does The Company Have Worker's Injury Or Compensation Insurance?

If they don't, you certainly don't want to do business with them. Not only is having coverage the responsible way to do business, but why wouldn't a company be willing to offer its homeowners complete peace of mind and protection from liability? This is a critical issue, because if a worker gets hurt on the job site and has no coverage under an accident policy or worker's compensation plan, then the you, the property owner, automatically becomes liable.

Although getting caught bypassing adequate coverage could potentially result in a lawsuit and innumerable legal hassles, many local contractors and home improvement companies don't want the expense of carrying insurance—so they don't. This not only risks the wellbeing of their employees but also the financial security of their clients. **Energy Improvements, Inc. also holds a $1 million accident insurance policy that covers all of our employees on the job site.**

Consumer Alert:

DO NOT use contractors who refuse to carry damage liability coverage to protect your property, are bonded or insured to protect you from lawsuit in case of worker injuries on your jobsite, and are current on their state Workers Compensation coverage.

9. Does The Company Use Subcontractors Or Employees To Do Their Installation Work, or hire "Day Labor?"

A common practice for smaller or less established contractors and installers is to wait until they have enough jobs sold that they need extra help, then hire "day laborers" to do the work. Often these day laborers are transients --here today, gone tomorrow -- with no interest in the quality of their work or the long-term relationship with you as a customer.

Energy Improvements, Inc. uses ONLY in-house employees to install the Energy Improvement Shield™. Each employee undergoes screenings, interviews, and drug testing. They also receive extensive, consistent training BEFORE they are ever allowed to work on a customer's installation, then each crew has a lead worker overseeing the installation, and each lead worker has an installation supervisor.

We utilize only clearly-identified company vans to transport our crews to and from your job site, and all **Energy Improvements, Inc.** employees wear clearly-labeled company uniforms and identification. Many of our client testimonials include specific comments on the professional appearance of our workers, their courteous and respectful attitude, and their excellent workmanship with attention to detail.

Consumer Alert:
Require proper identification of any workers coming to your home. Require any contractor to specifically use only their own employees, and not temporary or subcontracted labor.

10. Is The Company Privately Owned Or Part Of A Large Corporation?

It's hard to find the balance sometimes. Most companies selling some kind of "radiant barrier" product are simply one guy and a truck—as quickly as they appear, they can quickly disappear. They get excited about some new "angle" to make money by selling people on the tax credits or the “green” frenzy, and leap headfirst into the "radiant barrier" business. A year from now they may be servicing vending machines or doing pressure washing… whatever makes them money.

For the same reasons, other companies may simply add some "radiant barrier" type item to their product lines, hoping to make a quick buck for as long as it lasts. If it works out, they may stay in the game, but if not, there's always something new they can add to the lineup. Since they have no knowledge or experience with the product or installation, and no long term market interest, there is no staying power.

Still other companies are big, with lots of divisions and product lines. Clients find that when they call, they get lost in endless voicemail systems that are completely impersonal. Their stockholders only care about one thing: increasing profits for their bottom line.

The same family has privately owned **Energy Improvements, Inc.** for over 20 years. We maintain 25 to 30 trained employees and schedule 200 to 300 jobs each month. Our corporate culture is that every single job is to be performed with the highest quality control and individual attention. We have to: We Guarantee what we do for LIFE! Besides, we really believe in the "real" Golden Rule (about treating others as we'd like others to treat us)… and not the one about "he who has the gold makes the rules…!"

Every **Energy Improvements, Inc.** customer receives personal follow-up attention, complete with courtesy calls to ensure the homeowner’s complete satisfaction. Customer service is Energy

Improvement's highest priority. We expect to be here for a long time, and we want good relationships with every customer we work with.

11. Does The Company Offer Convenient Financing?

The type of financing offered by a company is often an indication of its size, stability, financial health, and credit rating. Strong financing options reflect a healthy financial history and a dedication to good business practices. Frankly, in today's market, if you're not running a "straight" operation, it's awfully hard to get any kind of customer financing program approved anymore.

Because of our unusually long history and good track record, Energy Improvements, Inc. qualifies for incredibly good financing options through both Wells Fargo Financial and General Electric Credit Corporation. For qualified customers, we also have a 0% interest program that will finance your Energy Improvement Shield product and installation for up to 24 months.

12. Is The Company Debt-Free?

This may seem an odd question, and one you normally wouldn't think about asking. Nowadays, with companies folding left and right, it's a fair question to ask. We can't answer for all the recent companies in the marketplace with similar-sounding products, but companies that are debt-free are not pressured to make unsavory business decisions or treat customers unethically. When a company is dangerously in debt, they are much more likely to unfairly increase prices or worse, slash prices and cut corners, skimping on supplies, insurance, and supervision.

For the record, **Energy Improvements, Inc.** consistently does several million dollars of business per year through fair and ethical business practices, and we continue to be completely debt-free (including all buildings, vehicles, and supplies).

13. Does The Company Use High-Pressure Sales Tactics?

Gimmicks. High-pressure, pushy salespeople. The bait-and-switch maneuver. Sneaky fine print. You never know what you will be subjected to these days, but you know it when you see it!

We don't need to rely on gimmicks to succeed, and we won't engage in any of these practices to squeeze extra sales out of customers. For almost 21 years, **Energy Improvements, Inc.** has consistently met the goals of company founder and president, Ed Graves: to provide a quality product with superior performance and professional installation, and do it with honesty, integrity and sincere care for our customers. The end result is hundreds of satisfied customers.

14. Does The Company Offer A Referral Program?

We find that most of our customers, once they begin to see how much they ARE saving, start sending us friends and relatives so they can get the same affordable energy saving advantages. Most of our business is built on these referrals from family, friends, and neighbors. It would be easy to take this for granted, or not offer to reward our customers for their obvious help in our business' growth. **Energy Improvements, Inc.** prides itself on doing our best to make sure every single referral is tracked back to the referring customer, and the referring party receives $100 for each job completed. This type of advertising is invaluable, and this is a way to show our appreciation and say, “Thank You”. Whether the referral is within six months or six years down the road, we never forget you as our client, and we make sure that no referral goes unrewarded.

15. Does The Company Have A Follow-Up System After The Sale?

Have you ever bought something from an enthusiastic salesperson who stayed in touch and attended your every need right up until the sale… then was nowhere to be found? Far too many companies take the attitude that once a sale is made, their job is done. **Energy Improvements, Inc.** appreciates and respects each customer we serve. That’s why every client receives a follow-up quality and service call. What’s more, every customer can take advantage of our monthly e-newsletter that is loaded with information about energy savings. We back our product and installation for LIFE… we want to have a positive relationship with our customers for at least that long!

16. What’s The True Cost?

It’s important when looking at cost not only to determine the bottom line, but also to consider the value. Many so-called "radiant barrier" installers charge extremely high prices for products that are simply not rated nearly as well… in fact, many that are just plain inferior (but they throw in the added stress, frustration, and hassles for free!).

Beware of companies that lack the business history to back up their warranties. These predators are only out to make a quick buck using any low-cost product they can call a "radiant barrier" as an add-on … even paint! They often have no insurance, no employees, and no intention of staying the course.

Frankly, many of our customers originally came to us asking if we could replace some older or inferior product they had been mistakenly told was a true "radiant barrier", like the highly advertised metallic spray paints. In some cases, undoing the damage can be as costly as a new installation. When making a decision about any product and company, make sure that sometime in the future you won’t be facing the need to redo the work at a greater cost than necessary.

Energy Improvement’s prices are very reasonable, especially considering the incredibly, proven energy savings and lasting value you receive in return. Companies who push "firesale" prices usually do so for a reason, and provide similarly low levels of experience and service, while inversely using high pressure sales tactics. All of this puts unfortunate homeowners at risk in a number of ways… from shoddy workmanship and lower actual energy savings, to uninsured employee injuries and potential lawsuits.

Energy Improvements, Inc., won't play the "lowball" game or use high pressure "closers" to "knock down" more sales. We won't shop around to find a cheaper look-alike product, or reduce what we do to sell anything that sounds like "radiant barrier"… even to those folks we talk to who decide against the **Energy Improvement Shield™ Radiant Barrier Film**… if we can't help them, we won't hurt them by selling an inferior product.

Many homeowners will attest to the fact that the benefit of a home improvement purchase is ongoing. It isn't just about money. Poorly done work will cost a fortune in maintenance and repair with little to no added value. Peace of mind is priceless, and a good investment lasts a lifetime.

If you would like to learn more about how much energy you could save with the affordable **Energy Improvement Shield™ Radiant Barrier Film** in your home, give us a call toll-free at 800-256-5867. It costs nothing for a Free in-home Energy Analysis

Sincerely,

Ed Graves
Energy Improvements, Inc.

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