



8 Ways to Save 70% or More on Your Utility Bills

***Discover how you can cut monthly utility bills dramatically with
an Energy Savings Package from NIH Homes.***

We hear it on the news, we experience it at the gas pumps, and we see it nibbling away at our household budgets. Many of the natural resources that we expected would always be there, are not only decreasing in supply, they're getting more and more expensive to bring into our homes.

In order to protect our reserves and control rising costs, we must all be more conscious about the way we use the earth's precious resources for the future. At NIH Homes, we are taking a proactive approach to energy conservation that dramatically reduces usage — and offers incredible savings in the process.

Here's how:

1. New designs utilize many aspects of the home to help reduce monthly bills. Window placement is one. We take advantage of strategically locating large windows to help heat and cool the home. Passive solar design refers to the use of the sun's energy for the heating and cooling of living spaces. In this approach, the building itself — or some element of it — takes advantage of natural energy characteristics in materials and air created by exposure to the sun. Passive systems are simple, have few moving parts and require minimal maintenance because there are no mechanical systems.

In the yard we take advantage of landscape design to use the same passive solar aspects to help shade the house during the summer and, when trees shed their leaves, it allows the sun to help heat the home in the winter.

2. Heating and cooling uses as much as half of the energy in your home, so making smart decisions about your heating, ventilating and air conditioning (HVAC) system can have a big effect on your utility bills — and your comfort. The programmable thermostat NIH provides is ideal for people who are away from home during set periods of time throughout the week. With the right settings, a programmable thermostat can save you about \$180 every year in energy costs.

Ducts that move air to and from a forced air furnace, central air conditioner or heat pump are often big energy wasters. Sealing and insulating ducts can improve the efficiency of your heating and cooling system by as much as 20 percent — and sometimes much more.

Geo-Thermal is the way of the future. Designed with leading edge technology, Geo-Thermal systems take heating and cooling efficiency to a new standard. Compared to ordinary furnaces and air conditioners, Geo-Thermal can provide you with energy savings of up to 70%. Coupled with today's best thermostats and an integrated monitoring system, it will provide the finest in comfort and reliability. Best of all, this smart technology uses the earth as a free energy source.

Geo-Thermal systems are energy-efficient. They are rated number one in energy efficiency because they can deliver an astounding five units of energy for every unit of electrical energy used. Compare that to even the best ordinary system that delivers less than one unit of energy for every unit it consumes. That translates into an efficiency rating of 500 percent, compared to the most efficient gas furnace, which rates only 94 percent.

Geo-Thermal is cost-effective. Because of its extraordinary efficiency, any added investment related to installing a Geo-Thermal unit is usually more than offset by your energy savings. In new homes, most homeowners will experience an immediate positive return on their investment when the system cost is added to the mortgage. In replacement installations, homeowners find that any added investment over the cost of an ordinary system is generally recovered in energy savings within a few years.

Geo-Thermal is comfortable. Capturing the relatively stable temperature of the earth to heat and cool your home, Geo-Thermal systems provide consistent, comfortable heating and cooling. You can even regulate temperatures in different areas of your home with an optional zone control system.

Geo-Thermal is reliable. Its reputation for dependability has been earned by using only the highest-quality components, design and workmanship. Computer run-testing after assembly ensures that your unit performs flawlessly at start-up. And in the unlikely event of a malfunction, our Geo-Thermal units are backed by the best warranties in the industry. Your geothermal unit will provide many years of dependable operation.

Geo-Thermal is quiet. It doesn't require noisy outdoor units that can disturb your peaceful surroundings or create unsightly additions to your home's appearance.

Geo-Thermal is safe. Because natural gas, propane or oil is not required to operate a Geo-Thermal unit, there's no combustion, flames or fumes — and no chance of carbon monoxide poisoning.

Geo-Thermal is flexible. One compact Geo-Thermal unit provides heating, central air conditioning and supplemental domestic hot water. A variety of configurations and sizes are available for a wide range of home applications, including newly constructed and existing homes. No matter what climate you live in, our Geo-Thermal system will deliver.

Geo-Thermal is clean. High-efficiency air cleaners found in our Geo-Thermal systems keep your indoor air quality clean, removing dust and pollen so you can breathe easier.

Geo-Thermal systems are environmentally friendly. The ground absorbs about 47 percent of the sun's energy that reaches the earth. Our Geo-Thermal systems harness that free, renewable energy and provide an environmentally friendly way to heat and cool your home. Installing a Geo-Thermal system is the environmental equivalent of planting 750 trees or removing two cars from the road. And the Geo-Thermal system doesn't burn fossil fuels, which means no emissions or harmful greenhouse gases are released into the air.

Because the system does not use natural gas or propane, there are no harmful emissions. It also helps to conserve precious resources that are rapidly depleting. And Geo-Thermal systems reduce our dependence on foreign oil products. In fact, the Geo-Thermal system has been recognized by the EPA and the Dept. of Energy as the most environmentally friendly heating and cooling technology available today. So you can take comfort in knowing that our units work in harmony with nature while saving you money.

Compare the performance. Our Geo-Thermal units can dramatically reduce your annual costs for heating, cooling and hot water by as much as 70% per year. No other gas furnace, air conditioner or heat pump comes close to Geo-Thermal efficiency. With continuous and dramatic increases in the cost of fossil fuels like natural gas, propane and fuel oil, the savings possibilities are even greater in the future.

Our Geo-Thermal dealer can use a sophisticated software program to estimate the heating and cooling costs for your home based on square footage, construction style and climate.

Geo-Thermal Loop Types

At NIH, we are trained to determine the best type of earth loop to use in any situation. The type of loop used is based on available land space and installation costs for specific areas.



VERTICAL LOOP

Vertical loops are used when space is limited. Holes are bored using a drilling rig, and a pair of pipes with special u-bend fittings is inserted into the holes. A typical home requires three to five bores with about a 15-foot separation between the holes.



HORIZONTAL LOOP

Used where adequate land is available, horizontal loops involve one or more trenches that are dug using a backhoe or chain trencher. Polyethylene pipes are inserted, and the trenches are backfilled. A typical home requires 1/4 to 3/4 of an acre for the trenches.



POND LOOP

If an adequately sized body of water is close to your home, a pond loop can be installed. A series of closed loops can be coiled and sunk to the bottom. A 1/2 acre, 8-foot-deep pond is usually sufficient for the average home.

3. Water, water everywhere? Even though 70% of the earth's surface is covered by water, less than 1% is suitable for consumption. With the earth's population continuing to rise, it is critical that we get smarter about how we use our supply of potable water. The good news is that we all can make a difference just by making a few small changes to our daily habits. The bulk of our water consumption indoors takes place in the bathroom. Some easy ways to save water in the bathroom are to shut off the water while you are brushing your teeth, take shorter showers and do not use the toilet to flush trash. Another great way to save water is to use water-conserving plumbing products.

Did you know that the toilets NIH installs in our homes can save homeowners up to 22,000 gallons of water per toilet per year? That's a lot of water! Not only is it saving on your water bill, but you'll also see a savings on your sewer bill.

With faucets and showerheads, we are able to decrease water usage by 30% or more — another huge savings when you multiply it times the number of bathrooms in the home.

4. Radon is a cancer-causing natural radioactive gas that you can't see, smell or taste. Its presence in your home can pose a danger to your family's health. Radon is the leading cause of lung cancer among non-smokers. It is also the second leading cause of lung cancer in America and claims about 20,000 lives annually. With the NIH Homes Energy Package you don't have to worry about radon. We install a system to keep it out.
5. NIH Homes qualified lighting provides bright, warm light but uses about 75% less energy than standard lighting, produces 75% less heat, and lasts up to 10 times longer.

If every American home replaced just one light bulb with an ENERGY STAR qualified bulb, we would save enough energy to light more than 3 million homes for a year, more than \$600 million in annual energy costs, and prevent greenhouse gases equivalent to the emissions of more than 800,000 cars.

Save Energy, Save Money

6. Appliances ultimately have two price tags — what you pay to take it home and what you pay for the energy and water it uses. ENERGY STAR qualified appliances incorporate advanced technologies that use 10–50% less energy and water than standard models. The money you save on your utility bills can more than make up for the cost of more expensive, but also more efficient appliances.
7. Energy-efficient windows employ advanced technologies, such as protective coatings and improved frames, to help keep heat in during winter and out during summer. These windows also block damaging ultraviolet sunlight that can discolor carpets and furnishings.

The Benefits of NIH-Installed Windows

- **Energy Savings.** Our qualified windows feature advanced technologies such as invisible glass coatings, vacuum-sealed spaces filled with inert gas between the panes, improved framing materials, better weather stripping, and warm edge spacers, all of which reduce undesirable heat gain and loss.
 - **Improved Comfort.** Compared to less efficient windows, our windows help keep homes warmer in the winter and cooler in the summer. That is because they can block 70% or more of the solar heat gain in the summer and reflect radiant heat indoors during winter.
 - **Protection of Your Home's Interior.** Photographs, furniture, flooring, and window treatments can fade or discolor after repeated exposure to direct sunlight. Our windows with special (Low-E) coatings can reduce fading by up to 75%.
 - **Reduced Condensation.** If an inefficient window or window frame gets too cold, water can condense — or even freeze — on the interior surface and then pool on the sill. Over time, chronic condensation can damage window sills, cause paint to crack, and encourage the growth of mold. Advanced frames, glass coatings, spacers and other technologies maintain the efficiency of our windows winter after winter, no matter how cold it gets.
8. Insulation that is properly installed and inspected in floors, walls and attics ensures even temperatures throughout the house, reduced energy use, and increased comfort.

Insulation is one of the keys to a comfortable, energy-efficient home. But simply having the right amount of insulation is not enough. If insulation is not properly installed, a home can have excessive heat gain during the summer and heat loss in the winter — forcing the heating and cooling systems to work overtime.

The Benefits of Properly Installed Insulation

- **Enhanced Comfort.** Properly installed insulation minimizes temperature variability indoors and helps keep rooms warmer in the winter and cooler in the summer.
- **Lower Utility Bills.** As much as half of the energy used in your home goes to heating and cooling. By preventing heat loss in the winter and heat gain in the summer, a properly installed insulation barrier reduces utility bills year round.
- **Improved Durability.** When insulation is properly installed, the potential for condensation that can lead to the decay of building materials is reduced, helping to improve the durability of your home.
- **Better Resale Position.** The improved comfort, lower utility bills, and improved durability of a properly installed insulation barrier can translate into higher resale value compared to less efficient homes.

Sprayed polyurethane foam is very efficient in sealing rim joists, cantilevers and the exterior of foundations from air infiltration, plus it provides high R-value insulation. Another added benefit of using sprayed foam on the rim joist is, it completely seals the hard-to-reach areas that are susceptible to air leakage and bug infestation.

On the outside of our foundations, sprayed polyurethane foam provides a vapor barrier on the outside of the concrete wall for a more comfortably heated basement. It also eliminates insulating the basement walls with fiberglass, which is where most of the mold problems arise.



There's a lot you can do right now to conserve energy and lower your monthly utility bills as affordably as possible. To get more ideas, visit websites such as www.smarterenergyliving.org, www.mnenergychallenge.org and www.home-smart.org where you'll find the most current information.

And when you're ready to discover how you can build the latest energy-efficient ideas into your new home plans, contact us for a FREE energy consultation where we will review how you too can save 70% or more on your utility bills:

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