
Overview - Your Energy Health Check-Up

What Is the Purpose of This Report?

This report is designed to provide you valuable information about the energy efficiency aspects of your new home. The purpose of the Energy Check-Up Program is twofold:

- First, to educate you on the subject as it relates to your particular residence, and the impact residential energy efficiency has on your community.
- Second, the program hopes to encourage you to make positive changes by installing some energy efficiency measures in your new home. If you do, it will pay dividends in terms of a more comfortable home, lower utility bills, increased property values, and a better environment.

Remember, though, that these are optional measures. Although the program is funded through SoCalGas, no federal, state, or local body demands that you make any of these changes. You alone have the power to decide whether to lower your utility bills and reap the other benefits by installing some or all of the recommended measures.

If, after reading your report, you find the benefits attractive and you begin considering the possibilities, congratulations! You are about to make a positive contribution to both your family and your community - one that will pay off every month in your pocketbook.

On the other hand, if you are tempted to leave this issue on the back burner, then remember this: after incentives, most of these measures can be installed at little or no out-of-pocket expense.

\$1 = \$20

According to a recent EPA study, for every one dollar that your utility bills go down, the sales price of your home goes up twenty dollars! So not only can you save every month, but you can get an extra payoff when it's time to sell.

Reducing energy, saving money, and living more comfortably. It just makes sense!

Energy Health Check-Up

Home Energy Efficiency Rating

Rated Home Address	1111, Anywhere Ct. Rialto CA - 92376	Case Number	05215425021325235
Date of Rating	12/1/1999	Inspector Name	Home Inspector
General Building Information		Inspector ID	9999
Year Built	1954	Interest rate for financial analysis	7.75%
Conditioned Floor Area	1940 sq.ft	Utility services provided by:	
Number of Stories	1	Electric	Gas
Number of Occupants	5	SCG	
Zip Code	92376		

Energy Improvement Measures	Useful Life(yrs)	Annual Savings	Estimated Annual Cost when financed as part of FHA Loan	Statewide Estimated Average Cost of Improvement	Added Cost for Energy Efficient vs. Standard Model	Greenhouse Gas Reduced Over Useful Life (lbs.)
Replace Incandescent Light Bulbs With Screw-in Compact Fluorescent Lights	9	\$56	\$5	\$105	\$60	178
Pipe Insulation for Water Heater	15	\$4	\$1	\$6	-	70
Install Low-Flow Showerheads	10	\$11	\$1	\$15	-	174
Upgrade to a High Efficiency Gas Water Heater	15	\$23	\$4	\$350	\$43	356
Advanced HVAC Diagnostic and Tune-up	10	\$220	\$39	\$450	-	1,335
Install a Programmable Thermostat	12	\$58	\$14	\$162	-	421
Install Hardwired Fluorescent Lights (smaller fixtures)	17	\$33	\$10	\$116	-	104
Install Hardwired Fluorescent Lights (Kitchen)	17	\$24	\$12	\$159	\$140	76
Insulation Package: Attic (R-30) + Wall (R-13)	25	\$303	\$183	\$2,134	-	3,453
Upgrade to Energy Star Windows	25	\$47	\$74	\$6,670	\$864	-278
Total	NA	\$780	\$343	\$10,167	\$1,107	5,888

Initial Energy Rating 66.97 Three Stars	Initial Annual Operating Cost \$1963
Energy Rating with Improvements 87.38 Five Stars	Annual Operating Cost with Improvements \$1183

How To Read Your Energy Health Check-Up

Energy Improvement Measures Table

This table lists the measures we have determined as being most cost-effective for saving energy and improving comfort for your specific home. Each column is explained below. Generally the savings generated by each measure will be greater than its annual cost when financed with a mortgage or refinance. **The Annual Savings and Annual Cost columns do not include rebates or other incentives that may be available, which may further reduce out-of-pocket expenses.** Be sure to check the Rebates and Incentives Summary for these additional savings.

In addition, other optional efficiency measures are outlined in the Other Energy Efficiency Measures section. These measures may take longer to pay for themselves in terms of energy savings alone; however they can still add comfort and value to your home. Some of these can be added on a do-it-yourself basis at greatly reduced cost.

Useful Life (yrs)

This column specifies the expected life for the measure listed. The expected life can be viewed as how long it will probably be until the recommended component needs replacement. For instance, if the useful life for a compact fluorescent light were 9 years, you would have to replace that light every 9 years. Generally all the high-efficiency equipment recommended has the same useful life as the standard equipment they are being substituted for. The exception is compact fluorescent lights (CFL), which last up to thirteen times longer than standard incandescent light bulbs. For CFLs, the cost calculations will take into consideration the savings of not buying thirteen short-lived incandescent bulbs.

Annual Savings

This column specifies the expected annual energy cost saving and is based on an extensive studies conducted by the Southern California Gas Company, other utilities, and industry experts. These values have been adjusted for your home and are estimates.

Estimated Annual Cost when financed as part of FHA loan

This column specifies the total annual cost if the measure is financed with a Federal Housing Administration (FHA) loan. Non-FHA loans with similar terms should yield similar costs. Many people finance energy efficiency improvements through home equity or similar loans. Divide this number by twelve to get the monthly costs.

Statewide Estimated Average Cost of Improvement

This column specifies the estimated average cost for the measure. The cost listed reflects the full price of the item as well as typical costs for

installation. For example, an Energy Star water heater that costs \$300 at a major retail chain, plus \$100 to install would show \$400 as the estimated cost. The amount you pay could vary from this amount based on where you live, or whether you select a more "top-of-the-line" model with added features or capacities.

Added Cost for Energy Efficient vs. Standard Model

This column illustrates the premium you pay for energy efficiency when replacing a component. For example, if you are about to replace an aging heat pump with a new standard model, this column shows how much more it will cost you for an Energy Star heat pump. **In order for us to recommend that you install a particular measure, this added incremental cost must be paid back through energy savings within the useful life of the measure.** Remember, any rebates or incentives (these are not figured into the calculations) will further improve the "payback" on that measure.

Environmental Benefit - Greenhouse Gas Reduced Over Useful Life (lbs.)

This column specifies the total amount of greenhouse gas, carbon dioxide, which will be reduced over the life of the measure. This value is given in pounds and can be quite significant if the measure saves a lot of energy and your utility use carbon-intense fossil fuels like coal or oil. Greenhouse gases contribute to global warming and any reduction helps in preventing human-initiated global warming. You can make a difference!

When the suggested energy-saving measures are implemented, it also reduces the need for new, multi-billion dollar power plants.

Energy Ratings and Operating Costs

The energy rating values are based on a 100-point scale. The scale is based on a source energy use scoring method. It takes into consideration all of the energy required as a result of energy features in the home, including losses in the generation, transmission and distribution system, rather than just the theoretical energy used at the site.

A house built with current code-compliant materials and equipment should receive a score of about 80. Stars are assigned according to a score as seen in the table below:

Star	Score Range
Five + Stars	=> 90 and <= 100

Five Stars	=> 86 and < 90
Four + Stars	=> 82 and < 86
Four Stars	=> 80 and < 82
Three + Stars	=> 70 and < 80
Three Stars	=> 60 and < 70
Two + Stars	=> 50 and < 60
Two Stars	=> 40 and < 50
One + Stars	=> 20 and < 40
One Star	=> 0 and < 20

Two estimated operating costs are given. The first is based on your home as it currently is, and the second assumes you implemented all of the recommended energy improvement measures.

Note

This report is based on information gathered from a variety of sources, which may include the home inspector, homeowner, potential homebuyer, utility company, or other party. In some cases, such as when areas of the home may have been inaccessible, default values are assigned based on building code and manufacturer data. The numbers contained in the report should be viewed as estimates only, whether referring to square footage, energy savings, or other listed values. When delivered in conjunction with a professional home inspection, this report should not be considered part of the home inspection report.

While every effort has been made to ensure reasonable accuracy, this report does not constitute a warranty, either expressed or implied, regarding the home's energy efficiency or cost of operation. While estimates are based on local climate and energy costs, individual usage patterns and weather variations can cause wide differences in utility expenses. The estimates given assume typical local weather and average settings for heating and cooling, hot water, etc.

Energy Improvement Recommendations

Replace Incandescent Light Bulbs With Screw-in Compact Fluorescent Lights

When retaining existing hardwired fixtures, almost all of the incandescent light bulbs can be replaced with screw-in Compact Fluorescent Light bulbs (CFL). These lights last up to 13 times longer than incandescent light bulbs and use one-fourth the energy to produce the same amount of light. This means you would have to buy and replace as many as 13 regular incandescent bulbs before replacing one CFL! They also have the added benefit of producing less heat. New technology allows these bulbs to produce a warm, pleasant light compared to old-style fluorescents. They are direct screw-in replacements for your existing incandescent bulbs. Most CFL manufacturers have recommendations on their packaging for what wattage you should buy to replace your current incandescent bulb. So before you purchase CFLs be sure to determine the wattage of incandescent light bulbs you are replacing.

Pipe Insulation for Water Heater

Insulate the hot and cold water lines going into and coming out of your

water heater for at least the first five feet of pipe coming out of the tank. This easy-to-do measure reduces the energy use of your hot water heater by reducing the conduction that occurs from the hot outlet pipe. It saves energy on the cold water side by reducing heat loss that occurs when "thermosiphoning" causes hot water to rise into the cold water line. If you have a recirculating pump on your hot water heater, insulate as much of your hot water piping as possible since this type of system keeps the hot water pipes hot throughout their length at all times.

Install Low-Flow Showerheads

Replacing a "Niagra Falls" showerhead with a low-flow showerhead saves in two ways. The first and most obvious is water usage and the second is in your water heating bill. Showerheads can usually be installed in minutes by the average homeowner using a simple wrench. Most shower pipes have a threaded end that allows the showerhead to be mounted directly by turning it onto the threads. Use a wrench that fits the base of the showerhead snugly. You may need to use teflon tape to wrap the threads of the shower pipe in order to make a leak-proof seal.

Upgrade to a High Efficiency Gas Water Heater

If you are considering replacing your gas water heater, you should look for the most efficient model possible. Your gas water heater uses a lot of energy even if you do not use a lot of hot water. Water heaters have standby losses, which are minimized using heat traps and insulation in newer more efficient gas water heaters. Newer units also have better heat exchangers and no pilot light. Look for one that has an Energy Factor (EF) of 0.6 or higher. Depending on your usage habits, the incremental cost of purchasing a more efficient unit vs. a standard one is more than paid for by the savings in energy that the unit will deliver over its lifetime.

Advanced HVAC Diagnostic and Tune-up

More than 60% of air-conditioned homes have both an improperly charged A/C unit and ducting which is excessively leaky. These two items each can cause the power consumption to be significantly greater than needed. Leaky ducts increase the energy use of a typical heating or cooling system by an average of 20% - 30%. Almost all existing homes have ducts that leak excessively. Conducting an Advanced HVAC Diagnostic & Tune-up ensures that your system is running at its most efficient, and prolongs the life of your equipment. The refrigerant charge is checked and adjusted if required and the unit's condenser coil is cleaned. The technician will inspect the entire system for proper airflow, test the ducts for leakage, and seal them with proper materials. This cost-effective measure will save energy and money as well as make your home more comfortable.

Install a Programmable Thermostat

To maximize your energy savings without sacrificing comfort, you can install an automatic setback or programmable thermostat. This affordable device will maintain the temperature setting based on your differing needs for heating and cooling throughout the day and night. While you might forget to turn down the heat before you leave for work in the morning, a programmable thermostat won't! By maintaining the highest or lowest required temperatures for four or five hours a day instead of 24 hours, a programmable thermostat can pay for itself in energy saved.

Install Hardwired Fluorescent Lights (smaller fixtures)

There are several areas in your home where you can replace the existing incandescent light fixtures with a Compact Fluorescent Light (CFL) fixture and bulb. Bathrooms are a good example. These lights last up to 13 times longer than incandescent light bulbs and use one-fourth the energy to produce the same amount of light. This means you would have to buy and

replace as many as 13 regular incandescent bulbs before replacing one CFL! There are also several alternatives for these fixtures which allow stylish decorative designs and different combinations of direct and indirect lighting. A contractor should be used to replace these fixtures because of the required knowledge of electrical wiring.

Install Hardwired Fluorescent Lights (Kitchen)

Your incandescent kitchen light fixtures can be replaced with fluorescent light fixtures and fluorescent bulbs. These lights last up to 13 times longer than incandescent light bulbs and use one-fourth the energy to produce the same amount of light. This means you would have to buy and replace as many as 13 regular incandescent bulbs before replacing one fluorescent bulb! They also produce less heat, helping to keep your kitchen cooler. New technology allows these bulbs to produce a warm, pleasant light compared to old-style fluorescents. Most manufacturers of incandescent light fixtures have corresponding styles that use fluorescent bulbs. A contractor should be used to replace these fixtures because of the required knowledge of electrical wiring.

Insulation Package: Attic (R-30) + Wall (R-13)

Increasing both your attic and wall insulation at the same time will reduce the amount of heat entering and leaving your home, and will likely be more cost effective than doing each separately. Insulating will make your house more comfortable and reduce your energy bills.

You can add attic insulation in two main ways: loose-fill or blown-in material, or blanket/batt insulation sold in rolls. For loose fill, call an insulation contractor. For batts, call a contractor or visit your local home/hardware center. Many people can install batts on a do-it-yourself basis.

Insulating the attic is also the best time to find and seal air leaks from the conditioned space. Look at attic hatches (can be weather-stripped, and insulation can be cut and affixed to the top), recessed ceiling light fixtures, pipe penetrations, or other visible air leaks. Use caulking or expanding foam to seal these leak areas. This is also a good time to ensure that your existing insulation is spread evenly throughout the attic, especially in the corners, and that the attic vents are clear of obstructions.

Insulating walls makes the most sense in the Very Cold and Cold climate zones. In warmer climates, it is cost-effective only in certain cases: With a wood-frame wall, when there is no insulation present or when exterior siding is being added; for a masonry wall, when you are installing exterior siding or doing major rehab inside the house.

There are a few common ways to add wall insulation:

Blowing into wood-frame wall cavities: This is typically done by making temporary holes in the exterior siding and using a hose to blow in loose fill or expanding foam insulation products. These techniques can also reduce air leaks adding further energy savings.

Under siding on wood-frame walls: When you add or replace siding, it is easy and very cost-effective to add a layer of rigid foam insulation under the siding. It is also recommended to put an air-resistant housewrap under the insulation to reduce air infiltration.

For exterior insulation of masonry (block) walls, you can apply an exterior insulating foam system (EIFS), covered by stucco, brick, or siding finishes.

On the interior of wood frame or masonry walls: This makes sense if you

are removing or rehabbing older walls or damaged plaster. It requires building out the inner wall to accommodate the insulation.

Whether you are insulating frame or masonry walls, this kind of work is typically not a job for the average homeowner; consult contractors who have this expertise.

Upgrade to Energy Star Windows

When it is time to replace your existing windows, consider upgrading from standard windows to Energy Star windows. The relatively small incremental cost of Energy Star-compliant windows vs. the cost of standard aluminum dual pane windows makes Energy Star-compliant windows an attractive option. In Cold and Very Cold climate zones, low-e windows with insulated frames and gas fillers are recommended. In the Temperate and other moderate climate zones with significant heating and cooling loads, low-e windows with solar control features that limit solar heat gain are recommended to balance heating and cooling efficiency. In the hotter climate zones, the solar control features are most important. Look for window products bearing the NFRC label; which provides objective information on the window's heating and cooling performance.

Efficient windows are much more widely available than they were a decade ago, thanks to the rapid growth of new technologies.

Look for these features in efficient windows:

Low-e coatings, which let in visible light but block radiant heat losses to cut heating bills.

Solar control, or "spectrally-selective", coatings block out solar heat gain to save cooling energy but let in visible light.

Insulated frames. Standard metal frames without insulation are the least efficient window choice – they conduct heat outside and can “sweat” in cold or humid conditions. Insulated vinyl, or vinyl, fiberglass, or wood frames with thermal breaks are much better choices.

Gas fillers. The invisible gas filler in these double-pane units also makes a difference: instead of plain air, high-efficiency models are filled with argon or krypton gas, which conducts very little heat and help the window's insulating properties.

Spacers. The material used to create the separation between the two panes of glass was traditionally metal. New materials are better-insulating and make the overall window more efficient.

For warm climate applications, retrofit **tinting films** can be applied to existing sun-exposed windows to reduce solar gain, cut cooling costs, and protect furnishings.

Replacing windows adds value in several ways: it improves the appearance and resale value of your home; reduces maintenance costs such as painting, and makes cleaning easier with tilt-sash designs. It improves comfort by making the area around windows feel warmer in winter, or by cutting down unwanted solar heat in summer. Another important benefit is reducing damage to your expensive furnishings by blocking ultraviolet light that fades fabrics, dries out fine woods, and harms heirloom photos and other items.

When shopping for windows, look for windows with National Fenestration Rating Council (NFRC) labels. These labels tell you how efficient the window product is, and also assures that the window has been tested and certified to perform at that level.

In the future, watch for Energy Star labels on windows; these products will be the most efficient available, and the Energy Star ratings will also help you select the right window for your climate.

Except for the experienced do-it-yourself carpenter, window replacement is best left to professional contractors.

Other Measures to Consider

Basic HVAC Diagnostic Tune-up

More than 60% of air-conditioned homes have an improperly charged A/C unit. An improperly charged A/C unit can cause the power consumption to be greater than needed. Conducting a Basic HVAC Diagnostic & Tune-up ensures that your A/C unit is running at its most efficient, and helps prolong the life of your equipment. The refrigerant charge is checked and adjusted if required. The unit's condenser coils are also cleaned. This will save energy and money as well as make your home more comfortable. HVAC Tune-ups are a very quick and cost-effective way to save energy.

Duct Testing/Duct Sealing

Over 90% of existing homes have ducts that are excessively leaky. Reducing the amount of heated and cooled air that leaks from your ducts will increase the overall efficiency of your heating and cooling system and make your home more comfortable. Leaky ducts increase the energy use of a typical heating or cooling system by approximately one third. Reducing this leakage is accomplished by having a trained contractor test for leakage and seal the ducts in your home. This is a very cost-effective measure for reducing energy bills, saving 20% - 30% on both heating and cooling costs.

Increase your Attic Insulation

Increasing your attic insulation will reduce the amount of heat entering and leaving your home. This can make your house more comfortable as well as reduce your energy bills.

You can add insulation in two main ways: loose-fill or blown-in material, or blanket/batt insulation sold in rolls. For loose fill, call an insulation contractor. For batts, call a contractor or visit your local home/hardware center. Many people can install batts on a do-it-yourself basis.

Insulating the attic is also the best time to find and seal air leaks from the conditioned space. Look at attic hatches (can be weather-stripped, and insulation can be cut and affixed to the top), recessed ceiling light fixtures, pipe penetrations, or other visible air leaks. Use caulking or expanding foam to seal these leak areas. This is also a good time to ensure that your existing insulation is spread evenly throughout the attic, especially in the corners, and that the attic vents are clear of obstructions.

Increase your Wall Insulation

Insulating walls makes the most sense in the Very Cold and Cold climate zones. In warmer climates, it is cost-effective only in certain cases: with a wood-frame wall, when there is no insulation present or when exterior siding is being added; for a masonry wall, when you are installing exterior siding or doing major rehab inside the house.

There are a few common ways to add wall insulation:

Blowing into wood-frame wall cavities: This is typically done by making temporary holes in the exterior siding and using a hose to blow in loose fill or expanding foam insulation products. These techniques can also reduce air leaks adding further energy savings.

Under siding on wood-frame walls: When you add or replace siding, it is easy and very cost-effective to add a layer of rigid foam insulation under the siding. It is also recommended to put an air-resistant housewrap under the insulation to reduce air infiltration.

For exterior insulation of masonry (block) walls, you can apply an exterior insulating foam system (EIFS), covered by stucco, brick, or siding finishes.

On the interior of wood frame or masonry walls: This makes sense if you are removing or rehabbing older walls or damaged plaster. It requires building out the inner wall to accommodate the insulation.

Whether you are insulating frame or masonry walls, this kind of work is typically not a job for the average homeowner; consult contractors who have this expertise.

Install Sink Faucet Aerators

A simple faucet aerator can be installed on all your sink fixtures to reduce the flow of water to 2.2 gallons per minute. Several aerator designs are available to match your current sink fixture's design. Kitchen sink fixtures can even have dual-flow type aerator that allows either a single stream or a shower stream.

Install Low-flow Toilets

Toilets are the largest water users in the home. Today's toilets offer a wide variety of designs and features while using only 1.6 gallons of water per flush. Some of the various characteristics that should be evaluated before purchasing a low-flow toilet include: operational noise, bowl cleaning, and water surface seal area (water standing in bowl after flush cycle; i.e., the more water surface area the less cleaning may be required).

Weather-Stripping

Weather-stripping a home makes good sense. Weather-stripping is essentially using sealants, foams, tapes, and gaskets to seal cracks on your doors and doorjamb, windows, ceilings, walls, and floors. In energy-efficient homes, builders use these tools to seal the myriad of cracks and gaps in framing along with hundreds of holes for plumbing, mechanical equipment and electrical wiring. The benefits to weather-stripping a home include: reduced energy costs for heating and cooling, a more comfortable home without drafts, a quieter home, and fewer air pollutants coming in from the outside. Many homeowners can do weather-stripping on a do-it-yourself basis.

Plant Trees

Trees offer a variety of benefits to your home, your neighborhood, and your community. They can reduce your cooling bills by shading your home and the surrounding landscape. They can lower your heating bills by blocking the cold winds that blow on your home and limiting the "heat island" effect. Trees also give privacy and a more pleasant atmosphere to your yard, as well as adding significant value to your property.

Because trees convert carbon dioxide to oxygen and absorb some pollutants, they also benefit our health. And it is nice knowing that, by planting trees in your yard, you are offsetting some of the carbon dioxide that your car gives off!

Appliances



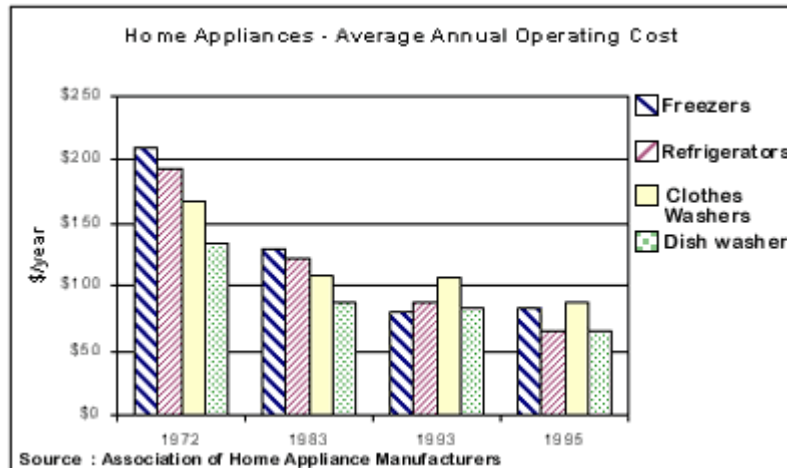
DISHWASHERS



REFRIGERATORS

OVENS
RANGESCLOTHES
DRYERSCLOTHES
WASHERS

Major home appliances have gone through an efficiency revolution in the last 20 - 30 years. Efficiency improvements over that period have averaged 200 - 300%. This means that the cost of operating a new refrigerator or freezer is half or a third the cost of keeping an old appliance that is near the end of its life. The old refrigerator, dishwasher, or clothes washer that is barely chugging along is costing you money!



The graph above shows how the cost of operating four major appliances has dropped in the last 30 years.

The graph above shows how the cost of operating four major appliances has dropped in the last 30 years. All figures in the graph represent the average efficiency for all appliances of that type that were sold and assume average usage and size, and an electrical cost of \$0.10 per kilowatt hour.

Appliances that are even more efficient than those shown in the graph are available. Horizontal axis washing machines, Refrigerators with the freezers above or below instead of side by side, and dishwashers with sensors that control water temperature all represent efficient technologies that improve upon the averages shown above. For more information, ask your appliance dealer about "Energy Star" compliant models or go the Department of Energy's Energy Star web site (<http://www.energystar.gov/products>) for more information.

In addition to the appliances listed in the graph above, clothes dryers and ovens/ranges also utilize a significant amount of energy, but have had smaller drops in operating cost over the years and vary less in efficiency between models. No detailed statistics are available on how the efficiency of these appliances has changed, but you can reduce the cost of owning and operating these appliances by shopping carefully and following a few simple rules. You can reduce the cost of operating these appliances by buying a dryer that senses the moisture content in clothes and shuts off when they are dry. Newer ovens have more insulation in their walls and better seals on the door which reduce the amount of energy they use and therefore the cost of operation.