

# A Greener Planet Begins At Home

Environmental Initiatives

## Ensuring Maximum Efficiency from Your Heating and Cooling System

Save money...while helping preserve a greener planet.

It takes less effort than you might think...



Conserving energy really does begin at home. Did you know that your heating and cooling costs can account for about half of your home energy bill?

The good news is — even small changes can result in substantial savings. Here are a few simple ways to save money and conserve energy by maximizing the performance of your home's heating and cooling system:

### Make Maintenance a First Priority

You'll keep your system operating at peak efficiency by making sure a qualified contractor performs seasonal inspections and preventive maintenance. A maintenance checkup of your heating and cooling system should include inspection of:

- Thermostat settings to ensure they maximize comfort, while minimizing energy use.
- Electrical connections, measuring current on motors, to ensure the equipment's safe operation and long life.
- Lubrication of all moving parts, if required by the manufacturer. Unnecessary friction increases the energy your system uses and shortens its life.
- System controls to check that the equipment starts, operates and shuts off properly.
- Evaporator and condenser coils. Cleaning the coils can decrease energy costs and extend the life of your equipment.
- Refrigerant levels in your central air conditioner to make sure they are adequate for operation at peak efficiency.
- Blower components to make sure the system is providing proper system airflow throughout your home. Proper airflow can improve overall efficiency by up to 15%.

Having a professional perform seasonal inspections can help maintain your system's efficiency and extend its life.

You also can do your part to reduce your system's energy use by inspecting, cleaning or changing your heating and cooling system's air filters. A dirty filter can significantly impact your system's performance by making it work harder to cool or heat your home.

### Is it Time to Replace Your System?

Another smart way to save energy — one that could cut your energy bills in half — is by upgrading your old heating and cooling system. New systems are 30% to 50% more efficient than older models — so in many cases, a new system can pay for itself through the energy savings you will receive on your monthly utility bills.

When should you consider a new system? If your heat pump or central air conditioner is more than 12 years old, if your furnace or boiler is more than 15 years old, or if they've needed frequent repairs, it may be time to purchase new equipment. Make sure that you work with a qualified contractor. A quality installation will optimize efficiency, while a poor installation can greatly reduce it.

A quality contractor also will take the time to properly size the air conditioner, boiler, furnace or heat pump for your home to maximize efficiency. For your peace of mind, insist on a contractor who employs technicians certified through North American Technician Excellence (NATE). You can find these local contractors online at [www.natex.org](http://www.natex.org).

When considering a new system, be sure to ask for its efficiency rating. The higher the number, the more efficient the system and the less expensive it will be to operate.

For central air conditioners and heat pumps, the Seasonal Energy Efficiency Ratio (SEER) rating, can range from 13 SEER up to 23 SEER. For split air conditioners and heat pump systems, both the inside and outside units must be a certified match to achieve the manufacturer's claimed efficiency rating.

Ask for a Certificate of AHRI Certified Performance, which verifies that the system being installed is a certified match.

The Annual Fuel Utilization Efficiency (AFUE) measures the amount of fuel converted to space heat in proportion to the amount of fuel entering the furnace or boiler. This is commonly expressed as a percentage. Current U.S. Federal minimum energy efficiency standards require that new residential furnaces have a minimum AFUE of 78%, hot-water boilers a minimum AFUE of 80%, and steam boilers a minimum AFUE of 75%.





## Save Energy...by Degrees

A programmable thermostat can help save you 5% to 10% on your heating and cooling bills, allowing you to achieve the perfect combination of comfort and conservation. It allows you to adjust the temperature automatically when you are away from home, helping you save even more energy.

Small adjustments to your temperature settings make a big difference — not just to the environment — but to your budget. For every two degrees you set your thermostat lower in the winter or higher in the summer, you'll save up to 10% on energy bills. Keep in mind, you need to maintain a consistent temperature setting for 8 hours or more to realize energy savings.

Imagine the energy savings if you and your neighbors join together in taking the "2 Degree Pledge!"

## Pledge to Save

Did you know that as much as half of all the energy used in your home goes toward heating and cooling? Join with your neighbors and take the 2 Degree Pledge!

Learn more about how to control your comfort by making wise choices and sensible decisions that also can help save you money and the world's environment.

Pledging to be part of the solution by making smart decisions regarding your home heating and cooling system, is a win-win proposition for you and the environment.

To discover even more ways to save energy — and to calculate how much you'll save by taking the 2 Degree Pledge — visit our Web site, [2degreepledge.org](http://2degreepledge.org).

## Performance Begins with Quality Installation

Saving energy and improving your comfort begins on day one — with a quality installation of your new heating and cooling system. By asking your contractor the right questions, you can help make sure your equipment is properly sized and installed to ensure it will perform at its maximum efficiency. Discuss this checklist with your contractor before, during and after installation:

- Review the load calculation. Determining heating/ cooling loads based on the size of the original system or on your home's square footage can cause the contractor to overestimate the size needed.
- Review the equipment documentation to ensure that it is certified to deliver the manufacturer's performance ratings.
- Review the condition of duct work for proper sizing and leaks that can waste energy.
- Measure and document airflow. Insufficient airflow will waste energy and fail to keep you comfortable. It also can cause health and safety problems and can sometimes shorten the system's life.
- Ensure the unit is electrically safe, by making sure fuses and circuit breakers are correct for your new system.
- Test the firing rate on a new furnace or boiler, and adjust for proper operation.
- Test the thermostat and check that it's properly programmed to optimize efficiency and is fully compatible with the new equipment.
- Measure air entering each room to ensure that each room receives the proper amount of heating and cooling.

A quality contractor also will spend time reviewing the latest green technologies with you. They often can improve your system's efficiency and your comfort with technologies such as zone controls, which can deliver the heated or cooled air to areas of your home where you need it, when you need it.

Visit the 2 Degree Pledge campaign Web site at [2degreepledge.org](http://2degreepledge.org) for more energy saving ideas, maintenance and installation checklists, information regarding green technologies, as well as tools and calculators to help you make informed heating and cooling system decisions.

