

Improving Savings and Health through Minor Conservation Measures in the Home¹

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Quick Facts

- Mechanical upgrades can increase the overall performance of a house by as much as 40%–50%.
- The remaining 50%–60% inefficiency in the overall performance of a home is largely misunderstood.

Terms to Help You Get Started

- **Home:** The house, the land where it is sited, and the occupants residing therein.
- **Overall Home Performance:** How well the house, its land, and its occupants function to maximize resources.
- **Mechanical Upgrades:** Largely related to higher-costing heating, ventilation, and air conditioning improvements.
- **Minor Conservation Measures:** Largely related to lower-costing mechanical upgrades or behavior modifications.
- **Maintenance:** Actions that are executed on a routine basis in order to prevent repairs from occurring.
- **Family Operations:** Routines and behaviors that are practiced at home by the occupants.

Keywords

Home performance, home-occupant behavior, home maintenance, family operations, home finances

Introduction: A Personal Lesson in Using Cost-Saving Technology in the Home

In order to show my family how our various practices and routines used electricity in our home, I recently installed a power cost monitor (NBC, 2011). The monitor communicated with the electric meter so that I could show my family how the monthly electric bill was being generated. My family tentatively agreed to the experiment and went about its business as usual. I felt that installing the power cost monitor was a small step to take in order to show my family how we all could contribute to improve the overall performance of the home. Although my wife was intrigued, she preferred to blow-dry her hair without the guilt caused by viewing a power cost monitor. The potential overload of information may have been too much, too fast for my family to fully “buy-in” to my idea of monitoring our power use.

The point from this story is that small steps should be taken in your pursuit of improving the overall performance of your home. Improving the overall performance of your home is rarely a direct, uninterrupted path to success,

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- Use detergents on clothes/dishes that have the least impact on pipes, the environment, etc. Some detergents are less damaging, especially for septic systems.
- Turn off water during activities such as shaving and brushing teeth in order to conserve water.
- Wash clothes at the coolest tolerable water temperature possible in order to conserve hot water (i.e., electricity).
- Avoid the pre-rinsing of dishes whenever possible in order to conserve water.
- Air dry dishes whenever possible in order to conserve electricity.
- Reduce the thermostat setting on the hot-water heater in order to conserve electricity.

List 2. Eight Minor Conservation Measures to Consider Implementing during the Short Term

- Install CFL or LED lighting throughout the home. These types of lights use less energy, reduce the amount of heat emitted into the house, and last longer than standard incandescent bulbs.
- Make sure that the dryer vent is clear of any debris. Dryer-vent blockage can cause dryer fires and require more clothes-drying time.
- Wrap insulation around the hot-water heater tank. Insulation wrapped around the hot-water heater reduces heat loss to the atmosphere.
- Insulate behind electrical outlet boxes, and cap off ones not being used. Insulating behind electrical outlet boxes reduces air leakage.
- Trim ½" off the bottom of interior doors that do not have visible clearance, or install louvered doors. Sufficient clearance helps to maintain balanced air pressure in the house.
- Maintain unbroken weather stripping around windows and exterior doors. Weather stripping reduces air leakage.
- Ensure that the bathroom tub and sink drains do not leak. Leaking drains cause water to be continuously used during activities.

- Install a clean air-conditioning filter. Dirty AC filters require more suction and can cause strain on a compressor.

List 3. Eight Minor Conservation Measures to Consider Implementing during the Long Term

- Ensure that properly sized exhaust-vent fans are installed in the kitchen and bathrooms. Exhaust fans not removing sufficient vapor can result in mold while those removing too much can pull undesirable gases into the house's airflow.
- Install a programmable thermostat. Programmable thermostats allow greater control over the time and temperature in which air is forced throughout the house, which results in reduced electricity use and costs.
- Install low-flow toilets and water fixtures. Low-flow toilets and water fixtures conserve water and electricity.
- Ensure that air ducts are sealed tightly at each joint. Sealed air ducts reduce air leakage.
- Ensure that attic space is filled with uncompressed insulation that is piled high. Insulation is designed to capture air and should never be compressed.
- Install a tankless hot-water heater. Tankless water heaters save electricity by only heating water when needed.
- Ensure that the home heating unit is inspected and that it displays an inspection-card history. Inspected heating units indicate that it is safe to operate the unit.
- Ensure that the electrical panel has its circuits/breakers clearly identified on the panel door. Identified circuits on the electric-panel door show which breaker to reset.

Summary

Mere minor conservation measures in the home will not necessarily result in instant improvements in overall savings and health. However, when combined with other home-performance measures (e.g., maintenance and family operations), the results will become more noticeable over time. The point is not to seek instant results but rather to establish a lifestyle that naturally gravitates toward conserving and optimizing resources.