



Case Study

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# Energy Conservation at Home-Myth or Reality

**Syed Adeel Ahmed Shah\***

Mechanical Department, National University Science & Technology, Oman

\*Corresponding author: Syed Adeel Ahmed Shah, Mechanical Department, National University Science & Technology, Muscat, Oman.

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## Abstract

Energy conservation has emerged as a significant issue in the modern age, and the matter of conserving energy remains a pressing need. A critical aspect tied to energy is its cost, which sees a steep rise. Escalating energy expenses directly impact earnings. Because of these factors, the initiative to conserve energy should commence at the user level, starting with one's own home. Approached with a positive perspective, this action can additionally contribute to decreasing the carbon footprint, which again emerged as the second most concerning issue.

Sustainability is another main topic which goes hand in hand with energy conservation, with effective conservation methods greatly contributing to fostering a sustainable future for homes. Some essential practises can help reduce energy costs drastically and some widely acknowledged practices can be debunked as misconceptions and myths which should be avoided.

**Keywords:** Energy Cost, Energy Conservation, Carbon Footprint, Sustainability

## Introduction

To begin with we shall discuss how we can conserve energy at our homes with some day-to-day practises which are very basic but still remain a practical challenge for the layman.

Those essential practices can be listed as follows:

### I. Apprehending the Energy Efficiency of each Appliance:

Grasping the efficiency of your existing appliances is crucial, each and every appliance functioning in the house is rated based on the kWh which should be the focal point in calculating the energy cost. In view of general public interest, we should look for the ENERGY STAR® symbol to find the best energy-efficient appliances. The next step is to gradually address these high energy consumption appliances and replace them with more environmentally friendly and significantly more energy efficient appliances.

**II. Measure and Monitor Energy Cost:** The measure of energy cost depends on certain factors, some of which are beyond your control. These factors encompass the size of your house, your geographical location, the quality of insulation in your home, and your predominant energy usage times (Tariff Rates). However, these factors can be monitored and easily managed

by observing the energy usage and thus saving almost a large amount annually. The most common way is to install an in-home display (Smart Meter) which offers quick and convenient access to your energy data, allowing you to monitor trends like increasing energy consumption, pinpoint energy-intensive appliances, and identify your most and least efficient time periods during the day. These insights are pivotal for adjusting your energy consumption patterns.

**III. Taking Small Steps to Create a Big Impact:** Small initiatives and changing certain practices at home can help in reducing the energy cost. For example, managing your thermostat can result in energy savings. Adjust your thermostat settings to heat or cool your home only when needed. Another important practise is to reduce the phantom power. Even when a small device like a toaster is connected to the wall but not actively functioning, it still consumes power. This phenomenon often referred to as phantom or standby power, can contribute to about 10% of the total yearly electricity consumption in an average household. To counteract this, it's advisable to unplug electronic appliances when they're not being used. This also applies to your cell phone; once fully charged, disconnect it from both the



charger and the wall socket. For added convenience, consider using power strips for appliances and electronics. This enables you to deactivate multiple devices simultaneously with a single switch, eliminating the energy drain from phantom power.

**IV. Use the Appliances in Off Peak Hours:** Off peak hours can be calculated within a day and heavy energy consumption appliances can be operated to reduce the energy cost drastically.

The Importance of practising energy conservation at home is not only significant for your finances and budget but also is relevant to environment safety because it reduces carbon footprint and contributes to more sustainable future. By adopting simple effective energy saving habits you are creating a cost effective, energy conserving and environmentally friendly atmosphere.

Some important points to be noted:

#### **Economic Savings**

Implementing energy-saving measures can lead to decreased utility costs over time. By utilizing energy-efficient devices, sealing gaps, and being mindful of energy consumption, you can significantly reduce your monthly financial burdens.

#### **Environmental Consequences**

Conserving energy aids in lowering emissions of greenhouse gases, which play a major role in climate change. By using less energy, you indirectly lessen the need for fossil fuels, subsequently minimizing air and water pollution while safeguarding natural reserves.

#### **Enhanced Comfort and Quality of Life**

Energy-efficient practices often coincide with improved home comfort. Proper insulation, effective heating and cooling systems and smart home technologies can establish a more enjoyable living environment while curtailing energy wastage.

#### **Sustained Longevity**

Energy conservation is a pivotal element in constructing a sustainable future. By adopting these practices within your residence,

you contribute to a broader initiative that strives to develop a more resilient and eco-conscious society.

#### **Local and Global Influence**

Your energy-saving endeavours can inspire others to follow suit. Additionally, collective energy conservation endeavours can impact policy shifts and prompt businesses to adopt more sustainable practices on a grander scale.

#### **Integration of Renewable Energy**

In conjunction with energy conservation, contemplate incorporating renewable energy sources like solar panels. Generating clean energy at home further diminishes reliance on fossil fuels and can potentially lead to energy self-sufficiency.

### **Conclusions**

To conclude energy conservation is one of the top concerns of our time although it looks highly complicated, yet it can be easily attained by observing small practices and disciplines in consuming energy at home and thus creating a huge impact. As the famous saying goes if we need to change the world, we start it in our own home. These initial few steps discussed in the article can be the steppingstone to a much more energy efficient world. Integrating energy-saving practices into everyday routine is a dedication that has positive outcomes for both general public and the environment. Through making well-informed decisions, adopting energy-efficient technologies, and raising consciousness, you play a vital role in creating a more enduring and eco-conscious future for upcoming generations.

### **References**

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