Issue: 4 Volume: 1 2022 ISSN: 2652-7987 (Online) ISSN: 2652-7995 (Print)

THE BLUE PLANET

A MAGAZINE ON SUSTAINABILITY
TOWARDS KNOWLEDGE SHARING

Article 3:
Developing an awareness program on Energy Conservation & Renewable Energy use

By
Dr. Ritu Bhatia

Published by

ACSDRI
KNOWLEDGE PRESS

DEVELOPING AN AWARENESS PROGRAM ON ENERGY CONSERVATION & RENEWABLE ENERGY USE

Author: *Dr. Ritu Bhatia, SPND Women's College, S.N.D.T Women's University Mumbai*

The Blue Planet-A Magazine on Sustainability
ISSN: 2652-7987 (Online) ISSN: 2652-7995 (Print)

Article: 3 Issue: 4 Volume: 1 2022
www.acsdri.com

Photography by
Anirban Dasgupta

Introduction:

Energy conservation and energy efficiency are the two utmost needs of our time. While our commitment to conserve energy will lead to lesser consumption of energy, on the other hand, commitment to achieving energy efficiency involves adopting technologies that will require less energy to perform the same functions.

However, sometimes the goal to conserve energy can be accomplished without involving gadgets or expensive technologies. For example, turning off the light when you are leaving the room, unplugging appliances when they are not in use and walking or cycling instead of driving while one is going to a neighbourhood market. In order to move towards energy conservation and energy efficiency practices, we need to change our behaviors and habits and have to adopt cost effective innovative technologies.

In this regard, education and training can play a vital role in creating a culture of energy conservation and energy efficiency behaviours and habits. We need to teach people the importance of energy conservation, how to gain more control over their energy bills and how to make sustainable use of Earth's natural resources. centigrade. Because of this incredibly stable Earth's temperature and climatic conditions, human civilisations were able to blossom.The Sustainable Development Goal-7 advocates for investment in energy efficiency and to increase the share of renewable energy by 2030.

Keeping this global target in mind, we have conceptualized an action-based research project to raise awareness of energy conservation among undergraduate college students living in the central suburbs of Mumbai city. The project also focused on how to change their energy consumption behaviors and habits.

About the Action Research Project

The broad objective of the project was to encourage young people to be energy efficient, and to introducing them with renewable energy source, alongside bringing awareness of the need to adopt new practices for energy conservation. The community-based action research project was carried out in 3 phases with 155 college students from the middle-income socio-economic neighbourhood of the central Mumbai. The project ran for three months from

October 2019 till December 2019 in collaboration with the Indian Institute of Technology (IIT) Mumbai and Tata Power.

The experts from the IIT Mumbai were responsible for providing training to selected students on how to make solar lamps and the experts from Tata Power were invited to educate students about energy conservation and how we can save electricity consumption by changing our habits.

A community-based action project was undertaken to evoke awareness in young students belonging to middle class homes regarding energy conservation. The broad aim of the project was to educate students to be energy efficient and a specific objective was to bring about change in their daily living habits and to become smarter users of energy.

Execution of Project

The protect commenced with a pre-training survey to check the students' level of knowledge and awareness of energy conservation and to understand their current energy consumption habits and behaviours.

The findings of the survey show that a majority of the students have poor energy consumption behaviours, such as keeping mobile phone on charge for the whole night, or not switching off water heaters, or keeping laptops on when not in use. Hence, an overall insight gained from the survey showed that the majority of the students were not aware of energy conservation measures, and few used renewable sources of energy.

Furthermore, the survey data showed that the majority of the students' families are paying around INR 1500 to 2000 in monthly power bills. The survey also showed that since most of these students are from modest economic backgrounds, some families also find it difficult to pay these electricity bills.

Phase 1: Orientation for Energy Conservation.

Presentation by Energy Expert

Experts from Tata Powers, India's leading Integrated power company, were invited as resource persons to inform students about the significance of energy conservation, energy generation processes, world energy use and India's position in terms of its carbon footprint.

Phase 2: Workshop on Solar Energy Lamps.

1. Making of Solar Lamps

The Solar lamp making project was executed by the experts from the Indian Institute of Technology (IIT) Mumbai. They trained students in how to make solar lamps to harness renewable solar energy. Thestudents were provided with solar lamp kits for a nominal price and the engineers from the IIT Mumbai trained the students to assemble the kits. The experts explained to the students how to recharge lamps everyday with solar energy. It was advised to use these solar lamps for study purpose at night and thereby will help their families both ways:

- *They can reduce the use of non-renewable energy,*
- *Enable them to help their families to reduce their electricity bills.*

2. Visits to manufacturers and outlets of Solar Products

The students were also taken to factories and outlet of solar products so that they get direct experience of the available solar products in the market.

Phase-3 Informative learning materials on Energy Conservation Ideas

In the last phase, students were given informative learning materials in English and Hindi on various energy conservation ideas and rationales for energy conservation. The booklet highlights how some simple steps can make a huge difference and demonstrates how to save energy in everyday live without incurring on additional smart gadgets or at very little marginal cost.

The learning materials covered tips on lighting systems, room air conditioners, and refrigerators:

Lighting Systems

- *Turn off lights when you are not in the room.*
- *Time to time clean dust deposits on your tube lights and bulbs as dust absorbs 50 percent of the light, and the light source reflects less light.*
- *Fluorescent tube lights and compact fluorescent lamps (CFLs) convert electricity to visible light up to 5 times more efficiently than ordinary bulbs and thus save about 70% electricity.*
- *Ninety percent of the energy consumed by an ordinary bulb (incandescent lamp) give off heat rather than visible light.*
- *Replace your electricity-guzzling ordinary bulbs (incandescent lamps) with more efficient types. Compact fluorescent lamps (CFLs) use up to 75 percent less electricity than incandescent lamps.*
- *Paint and decorate your house in pale colours instead of dark colours, as pale colours reflect light, and the room needs less artificial lighting.*
- *Choose suitable lamp shades, as darker lamp shades absorb or reflect light in the wrong direction. Hence, take the right advice and choose suitable lamp shades.*

Awareness program on Energy Conservation & Renewable Energy Use

Renewable Energy - the fuel for Future Economic Development

Room Air Conditioners

- *Use ceiling or table fan as first line of defence against summer heat. Ceiling fans, for instance, cost about 0.30 paise an hour to operate - much less than air conditioners (INR.10.00 per hour).*
- *You can reduce energy consumption from your air-conditioning by as much as 40 percent if you use thicker window curtains. Plant trees and shrubs to keep the day's hottest sun off your house.*
- *A good air conditioner will cool and dehumidify a room in about 30 minutes, so use a timer and leave the unit off for some time.*
- *Try to close the door of the room when your air-conditioner is on.*
- *Clean the air conditioner's filter every month as dirty air filter reduces airflow and may damage the unit. Clean filters enable the unit to cool down quickly and use less energy.*

Refrigerators

- *Make sure that the refrigerator is kept away from all sources of heat, including direct sunlight, and appliances such as the oven, and cooking range.*
- *Refrigerator motors and compressors generate heat, so allow enough space for continuous airflow around the refrigerator. If the heat can't escape, the refrigerator's cooling system will work harder and use more energy.*
- *Don't overfill the refrigerator and be sure to allow adequate air circulation inside.*
- *Think about what you need before opening the refrigerator door. You'll reduce the amount of time the door remains open.*
- *Allow hot and warm foods to cool and cover them well before putting them in the refrigerator. The refrigerator will use less energy and condensation will be reduced.*

Water Heaters

- *To reduce heat loss, always insulate hot water pipes, especially where the pipe is passing through an exposed area.*
- *By reducing the temperature setting of the water heater from 60 degrees to 50 degrees C, it is possible to save over 18 percent of the energy used at the higher setting.*

Microwave Ovens & Electric Kettles

- *Remember, microwaves cook food from the outside edge toward the centre of the dish, so if you're cooking more than one item, place larger and thicker items on the outside.*
- *Use an electric kettle to heat water as it is more energy efficient than using an electric cooking top.*
- *It takes more energy to heat a dirty kettle, so clean your electric kettle regularly by mixing vinegar in the water and keeping it on the boil for some time as the mixture will remove mineral deposits.*
- *Don't overfill the kettle for just one drink. Heat only the amount of water you need.*

Computers

- *Keep your computers and laptop in sleep-mode when they are not in use, that simple action will help to reduce*

energy consumption by approximately 40%

- *Unplug the battery charger of your-laptop, mobile and digital camera as they draw power whenever they are plugged-in.*

- *Buy energy efficient appliances with energy star ratings as higher star rated appliances consume less energy and save money.*

Conclusion:

The post project survey response showed that exposure to the idea of energy conservation and energy efficient gave the majority of the students a better understanding of the issues. Most of the students also responded that they are using the solar lamp at night. The project has taught students to harness renewable energy in cost effective way for their households. Hence this action-based project and training method can be adopted as a working model:

- *to bring behavioral change,*

- *to teach youths about importance of energy conservation and,*

- *to introduce them with one of the primary sources of renewal energy.*

Renewable energy for ALL by 2030 - Our Commitment To PARIS AGREEMENT

#biodiversitymatters

I ♡ NATURE

PHOTOGRAPHY SERIES

Photography by
Ravindra Srinath

Photography by
Dr. Kuntal Goswami

...Loss of Biodiversity is one of the TOP EXISTENTIAL THREATS for mankind...

Source: Global Risk Report

#biodiversitymatters

Our Campaign

Visit: Biodiversity Knowledge Forum

https://acsdri.com/biodiversity-knowledge-forum/

Published by

ACSDRI

KNOWLEDGE PRESS

www.acsdri.com

We are a Registered Charity Organisation

This magazine is supported by

BITNET INFOTECH

www.bitnetinfotech.com

VIBGYOR

www.infovibgyor.com

WILD VOYAGER

www.wildvoyager.com

Accounting & Business CARE

www.accountingbusinesscare.com.au