

BEST PRACTICE – 2022-23

Title of the Practice

“ENERGY LITERACY PROGRAMME”

Name of the Organizing Department

Department of Physics

Name of the College



S.V.B. Government Degree College
Kiolkuntla

DEPARTMENT OF PHYSICS

Title of the Practice

To train the students to know about the Energy i.e. “ENERGY LITERACY PROGRAMME”

Brief Description of the Practice

Energy is the key driver of social and economic growth of any country or community. Communities and countries having sufficient energy sources are able to grow technologically and economically faster than others who don't have such access. But, current energy generation and supply systems are mainly centralised and heavily dependent on fossil fuels. This results in dependency on energy imports, the financial burden on governments, loss of energy in transmission and distribution. Moreover, currently, 80-85% of the world's energy needs are being fulfilled with fossil energy, the main cause of global warming and climate change. Its impacts can be seen in the form of forest fires, floods, heat waves, and cyclones with increasing intensity and frequency.

Renewable energy technologies have evolved to become viable alternative options, but adaption is slow. This is because of lack of widespread awareness on energy supply issues, climate change issues, and the availability of alternative solutions.

In this “Energy Literacy Programme” we aim to educate the student community to have an understanding of energy generation and consumption, and its impact on the environment. Energy Literacy training would enable individuals to make informed decisions on sources of energy to be used and appropriate amounts to be used.

AIMS and OBJECTIVES:

- ✓ To realise the students how much of energy we are using in day to day life.
- ✓ To understand about the sources of energy and where it comes from.
- ✓ To know about the units of energy and how to quantify the energy in simple terms.
- ✓ To know about the carbon footprint i.e. the amount of emission of carbon for every unit of energy consumption.

- ✓ To know about the climate changes due to the consumption of energy.
- ✓ To understand Energy as a problem and solution.
- ✓ How to avoid the use of energy by 1/3rd
- ✓ How to minimize the use of energy by 1/3rd
- ✓ How to generate remaining 1/3rd energy locally
- ✓ To educate the student community about the misconception about solar energy.

GOAL:

To make the student community to understand about the basic facts of the Energy and the ways to prevent the environmental effects from the over usage of energy

CONTEXT:

To realise the students that we are use a lot of energy:

With this topic the students will sense that we, the humans use a lot of energy. Not only in the form of electricity and fuel but also in our day to day life by use of several products like paper, furniture, milk, etc.

To understand the sources of energy:

By this talk the students will realize where the energy comes from. Coal, petrol, LPG, etc. travel several thousand of kilometers before they are used. One will also know how many stages these fuels need to pass for reaching our home.

Understanding the units of energy and quantifying it:

With this topic the students will get the basic skill, which will be useful in quantifying the amount of energy used. Distance is measured meter or kilometer, liquid is measured in litre or kilolitre and weight is measured in gram or kilogram, in the same way ENERGY is measured in KWH- Kilo Watt Hours. Until one quantifies and understands the magnitude of energy used, overused, or misused, he/she cannot put effort into reducing energy consumption.

To know how much is your carbon foot print:

Most energy one consumes comes from fossil fuels, which emit CO₂, a greenhouse gas responsible for global warming. This topic helps the students to understand carbon emissions and estimate their carbon footprint.

Climate change has happened:

This topic brings the attention to know the fact that climate is not changing, but it has been changed. By making the students to aware about various events that have taken place across the world in the recent past.

Energy as a problem and solution:

This context helps students to think, how we can use solar energy in a localized manner to resolve many problems that the world is suffering from, including unemployment, inequity, etc.

Avoid use of energy by 1/3rd:

One needs to move towards energy independence from fossil fuels and switch to solar powered living. From this topic students can understand that use of solar energy as well, needs to be avoided as much as possible as there is no manufacturing in the world, which does not have side effects.

Minimize the use of energy by 1/3rd:

Beyond a point, when use of energy cannot be avoided, we need to minimize our energy needs. In this class students will learn that how one can minimize the use of energy by using energy efficient appliances.

Generate remaining 1/3rd energy locally:

After following the avoid and minimize formula, the last step is to generate the remaining energy requirement. Examples will be given in this class on how one can generate and full-fill their own energy needs using solar energy.

Misconception about solar energy:

There are many misconceptions related to solar PV installation which are hindering the adoption of solar energy. This class helps the students to clear all the problems and misconceptions related to solar.

Conclusion:

After completion of this programme one can understand about generation and consumption of energy and its impact on environment and climate change. And the students will take a pledge for measurable action in the direction of adopting energy solutions that are in sync with nature.

PRACTICE:

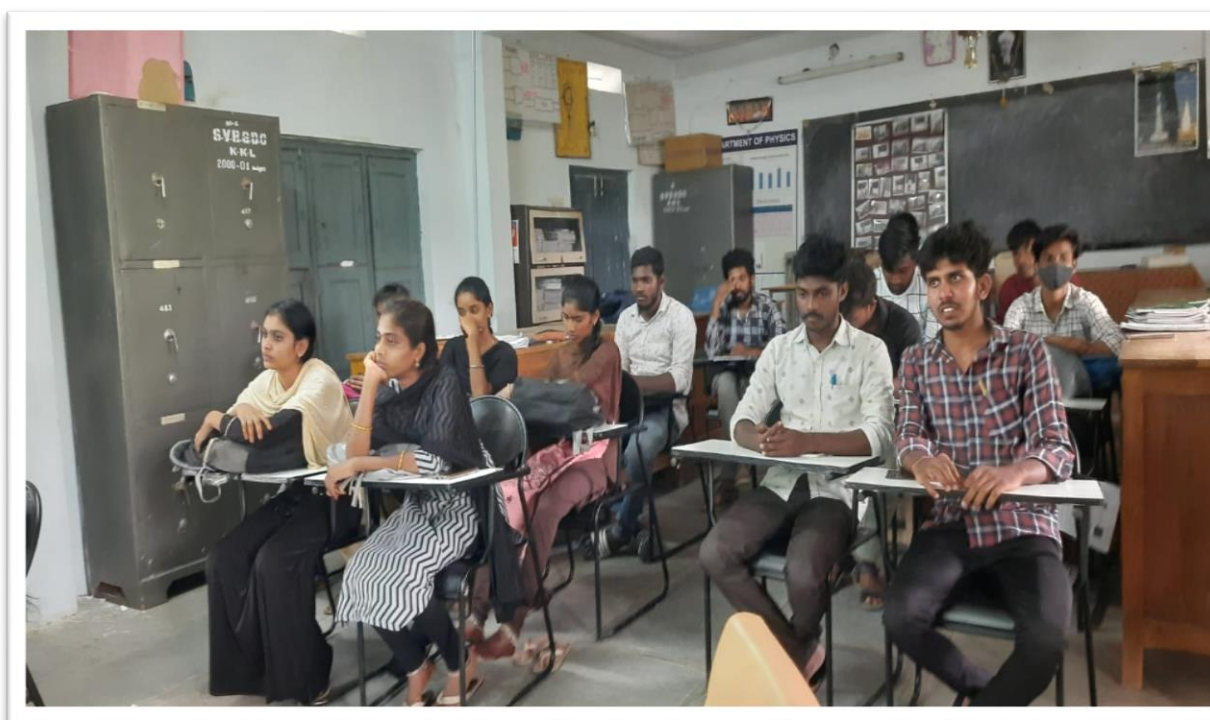
1. Conducting classes for the student community on various topics relating to energy on different days to know about the basic facts of energy, sources of energy, misuse of energy, saving of energy, environmental effects, and alternating energy sources.
2. Organizing the debates and group discussions about various topics taught during the training programme.
3. Conducting an assessment test for the student community how far they understand about the energy literacy programme.

EVIDENCES OF SUCCESS:

Day 1: - How much of energy we are using in day to day life.



Day 2: - The sources of energy and where it comes from



Day 3: - The units of energy and how to quantify the energy.



Day 4: - Know about the carbon footprint



Day 5: - Climate changes due to the consumption of energy.



Day 6: - Energy as a problem and solution.



Day 7: - Avoid the use of energy by 1/3rd



Day 8: - Minimize the use of energy by 1/3rd

12 Tips To Save Energy At Home

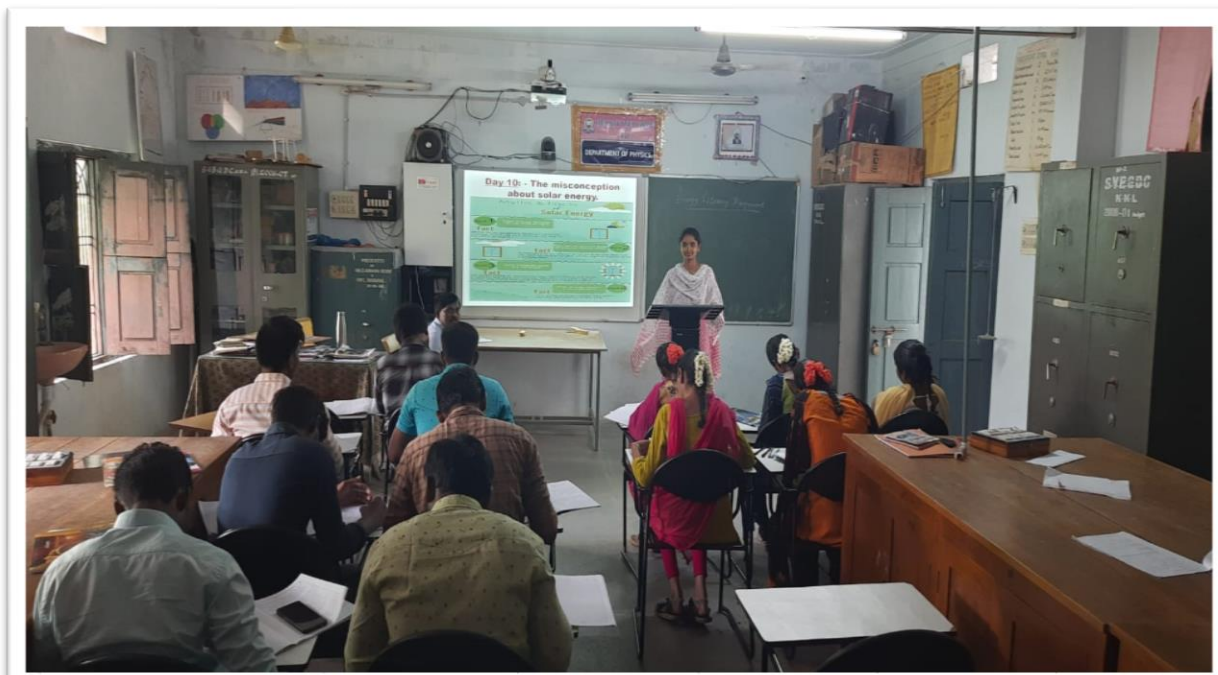
1  Turn off lights when leaving a room	2  Switch to energy efficient appliances	3  Use LED lights
4  Unplug devices when not in use	5  Keep thermostat at low temperature	6  Reduce water consumption
7  Use smart automated devices	8  Switch to double glazing	9  Cook with the lid on
10  Use a smart meter to track usage	11  Wash at a cold temperature	12  Use solar powered devices



Day 9: - Generate remaining 1/3rd energy locally



Day 10: - The misconception about solar energy.



PROBLEMS ENCOUNTERED:

- The major constraint is the availability of experienced faculty.
- Though the practice has a lot of merits, there are certain challenges in developing the student community.
- To bring the student community at the same level of through to the training modules.

RESOURCES REQUIRED:

- The availability of the proper information in the form of material.
- The trainers for delivering the information to the student community.
- Audio visual aids for the teaching as well as for the updated information.
