

Community Service Project on energy conservation in urban areas.

A case study from Kotcherla.

**COMMUNITY SERVICE PROJECT REPORT SUBMITTED TO
SGK GOVERNMENT DEGREE COLLEGE, VINUKONDA**

By

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SGK GOVERNMENT DEGREE COLLEGE, VINUKONDA

VINUKONDA -522647

ANDHRA PRADESH,

INDIA

JUNE – 2022

Community Service Project Report

Submitted in accordance with the requirement for the degree of B.Sc (M.P.Cs)

Name of the College: SGK GOVERNMENT DEGREE COLLEGE

Department: PHYSICS

Name of the Faculty Guide: B.NAGESWARARAO

Duration of the CSP: From 31.05.2022 To 30.06.2022

Name of the Student: P.Chandhra kala

Programme of Study: II BSC (M.P.Cs)

Year of Study: 2022

Register Number: Y203099077

Date of Submission:

Verified

Student's Declaration

I, P.Chandhira kala , a student of II B.Sc (M.P.Cs) Program, Reg. No. Y203099077 of the Department of PHYSICS, GOVERNMENT DEGREE College do hereby declare that I have completed the mandatory community service from 31.05.2022 to 30.06.2022 in Kotcherla under the Faculty Guideship of Sri B.NageswaraRao, *Department* of PHYSICS in College

P. Chandhira kala
(Signature and Date)

Endorsements

Faculty Guide

Head of the Department

Principal

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CERTIFICATE

This is to certify that the project entitled "Sustainable approach to energy conservation in urban areas. A case study from Kotcherla." has successfully completed and submitted by P.Chandhra kala in partial fulfillment of requirement for the completion of B.Sc. course during the course of community service project under my guidance.

(B.Nageswararao)

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Acknowledgements

It gives me an immense pleasure and pride to express my gratitude and respect for my teacher and guide **Mr. Bandla Nageswararao Sir**, SGK Government Degree College, Vinukonda, Palnadu District, for his expert and inspiring guidance throughout the period of my work. I am indebted to him for enlightening me on the finer skills of dealing with social awareness problems. It would have been impossible to achieve this goal without his constant support and encouragement.

It is pleasant duty to express my sincere thanks to **Dr. K. Srinivasa Rao, Principal**, SGK Government Degree College, Vinukonda, Palnadu District who supported me for getting the survey details.

I am also expressing my sincere thanks to **V. Bala Yesu, Lecturer in Chemistry** for their valuable encouragement in this work.

I take this opportunity to thank all of my faculty members of SGK Government Degree College for their valuable suggestions, encouragement and help during my project work.

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ABSTRACT

Energy conservation is the effort made to reduce the consumption of energy by using less of an energy service. This can be achieved either by using energy more efficiently (using less energy for a constant service) or by reducing the amount of service used (for example, by driving less). Even though energy conservation reduces energy services, it can result in increased environmental quality, national financial security and higher savings. On a large scale, energy conservation is an important element of energy policy. Energy conservation is often the most economical solution of energy shortages.

Energy conservation refers to the methods of reduction in energy consumption by way of elimination of wastage and promotion of efficiency. We know that due to vast gap between demand and supply, lot of efforts being done to bridge the gap in terms of generation of more electricity, which requires a lot of investment and create lots of environmental issues.

Energy conservation is the key element of energy management. We can reduce the energy consumption by adopting various ways of energy conservation which includes efficient use of technologies and avoiding energy wastages.

ENERGY CONSERVATION

ENERGY CONSERVATION.

INTRODUCTION:

Before learning about natural sources of energy, let's understand what energy is. The classical description of energy is the ability of a system to perform work, but as energy exists in so many forms, it is hard to find one comprehensive definition. In short, energy is the ability of a system to make things happen. It is a property of an object which can be transferred from an object to another object or converted to different forms but cannot be created or destroyed. There are numerous sources of energy. It can be chemical energy, electrical energy, heat/thermal energy, mechanical energy, nuclear energy, and energy in the form of electromagnetic radiation i.e. light.

Sources of energy contain energy in them in forms that cannot be used directly but living organisms require energy to stay alive. Therefore, you must unlock this energy to get work done. Humans get energy from food which has this energy stored in the form of chemical energy. Your body absorbs this energy from food and burns it to fuel your body so that you can run around and have fun. A candle has chemical energy stored in it, but it has to be burnt to be useful. This conversion of chemical energy to yield heat and light energy happens through burning. Burning is a process of converting chemical energy to heat energy and sometimes light too.

We must make one observation, though energy seems to have a shelf life. If you keep a hot object out in the open, it will cool after a while. Can you collect this energy back from the atmosphere? You will learn more about the flow of energy when you discuss the Laws of Thermodynamics. We have discussed a few sources now let's discuss them in detail.



Types of energies

Energy exists in many forms and they can be converted from one form to another. Although there are many types of energy such as gravitational energy, atomic energy and so on, there are only two major forms of energy known as potential energy and kinetic energy.

Kinetic energy is the energy in moving objects. Examples of kinetic energy include mechanical energy and electrical energy.

Potential energy is the energy stored in objects that can be used for future use. Examples of potential energy include chemical energy and nuclear energy.

Below we have discussed the five major types of energy:

- **Electrical Energy**

The energy carried by moving electrons in a conductor is known as an electrical energy. The natural source of electrical energy is the lightning.

- **Chemical Energy**

Chemical energy is the energy stored in the bonds of chemical compounds.

- **Mechanical Energy**

Mechanical energy is the energy in an object due to its motion.

- **Thermal Energy**

Thermal energy is the energy a substance or system has related to its temperature.

- **Nuclear Energy**

The energy trapped inside each atom is known as a nuclear energy

Types of energy sources

Sources of energy can be classified into:

- Renewable Sources
- Non-renewable Sources

A renewable source is the natural resource that causes no impact on nature. Renewable sources of energy are available plentiful in nature and are inexhaustible. These resources of energy can be naturally replenished and are safe for the environment.

Examples of renewable sources of energy are: Solar energy, geothermal energy, wind energy, biomass, hydropower and tidal energy.

Non-renewable sources of energy cause an impact on the nature and are a limited supply source. Non-renewable sources can be extracted from the earth and will run out as time passes.

Examples of non-renewable sources of energy are: Natural gas, coal, petroleum, and nuclear energy and hydrocarbon gas liquids.

Renewable	Non-renewable
The resources that can be renewed or replaced are called renewable sources of energy.	The resources that cannot be renewed once they are consumed are called non-renewable sources of energy.
These resources do not cause any pollution to the environment.	These resources cause pollution to the environment.
Renewable resources are inexhaustible.	Non-Renewable resources are exhaustible.
Renewable resources are not affected by human activities.	Non-Renewable resources are affected by human activities.
Examples of Renewable resources- Air, water and solar energy.	Examples of Renewable resources- Mineral, oil, and Coal.

Natural Sources of Energy

The natural resources around us provide a variety of sources of energy around us. During the Stone Age, it was wood. During the Iron Age, we had coal. In the modern age, we have fossil fuels like petroleum and natural gas. So how do we choose sources of energy?

Good sources of energy should have the following qualities:

- Optimum heat production per unit of volume/mass used
- Easy to transport
- Least Polluting
- Economical

Earlier coal was used pretty much everywhere, from domestic use to steam engines all the way to the Titanic. One problem that coal faced was transporting large amounts of coal needed all

around the world. Hence, now the world over energy use is shifting towards either diesel or electricity. This example shows how petroleum is better than coal on all the above parameters.

Types of Natural Sources of Energy

There are two types of natural sources of energy classified by their popularity and use,

- Conventional Sources of Energy
- Non-Conventional Sources of Energy

Difference between Conventional and Non-Conventional Sources of Energy

Conventional	Non-conventional
The resources which have been in the use for a long time.	The resources which are yet in the process of development over the past few years.
These resources are exhaustible.	These resources are inexhaustible.
These resources cause pollution as they emit smoke and ash.	These resources are usually pollution-free.
These resources are very expensive to be maintained, stored and transmitted.	These resources are less expensive due to local use and can easily be maintained.
Examples- coal, natural gas, petroleum, and water power.	Examples- solar, biomass, wind, biogas, and tidal, geothermal.

Importance of conservation of energy

Energy conservation plays a significant role of lessening climate change. It helps the replacement of non-renewable resources with renewable energy. Energy conservation is often the most inexpensive solution to energy shortages, and it is more environmentally kind alternative to increased energy production.

Since, we have limited quantity of non-renewable energy resources available on earth, it is very important to preserve energy from our current supply or to utilize renewable resources so that it is also available to our future generations.

Energy conservation plays a very important role because utilization of non-renewable resources also impacts our environment. Specially, usage of fossil fuels supplies to air and water pollution

such as carbon dioxide is produced when oil, coal and gas combust in power stations, heating systems, and engines of car.

As we all aware of that carbon dioxide works as a transparent layer in the atmosphere that is part of the cause to the global warming of the earth, or we can also name it as greenhouse effect. Global warming has its own consequences in our atmosphere. It has its deadly effects like spreading of different diseases, warmer waters and more chances of hurricanes, financial costs, polar ice melting, increased chances and intensity of heat waves. Ozone depletion is the reduction of the protection layer of ozone in the uppermost atmosphere by chemical pollution. Ozone layer is the protection line between earth and the ultraviolet rays emitted by the sun. People who have more exposure to UV radiation can have some health problems like DNA damage, skin cancer, aging and other problems related to skin.

There could be some possible issues that include a danger to human body health, impact on environment like rising sea levels, and major changes in vegetation growth methods. When coal is burned, it releases sulphur dioxide into the air and therefore, it reacts with water and oxygen in the clouds and forms acid rain. Acid rain kills fish and trees and also damage limestone buildings and statutes. These types of global problems can be resolved. As per the data of United States calculated per year, we found that the average family's energy uses produces over 11,200 pounds of air pollutants. Therefore, every unit of kilowatt of electricity preserved diminishes the natural environment impact of energy use.

Socio-Economic Survey of the Village/Habitation.

ACTIVITY LOG FOR THE FIRST WEEK

Day & Date	Brief description of the daily activity	Learning Outcome	Person In-Charge Signature
Day - 1	Our Section told them to a room and told them object csp	learn what is csp and introduction csp	Raj
Day - 2	Everyone divided them groups one sir was given to each group	students and divided into groups gave manetion	Raj
Day - 3	our group were told now do it by our sir csp explanation	Today i learn how to divided the groups in manx	Raj
Day - 4	our sir told you how to choose area	i learn to chose area for the survey	Raj
Day - 5	we chose area that are in our area	i learn real area are beautiful for the survey.	Raj
Day - 6	sir told us how to go to that area and talk.	i learn how to speak the people in this time of survey	Raj

WEEKLY REPORT

WEEK - 1 (From Dt..... to Dt.....)

Objective of the Activity Done:

Detailed Report:

All of our section were called to
aroom. we all to that-

we don't know that we went
for. Then sir told. we asked If
we knew what the.

was for we should.
we don't The sir told us C.S.P.
full form. told. The told.

Project Called C.S.P.
Then we were all divided into
group. we were all. divided

group was give a sir. our
told show the altitude. came
told how to talk and how
were going into that
area near to them. Told me
what to do

when I went to that
area. our group.

Page No:

ACTIVITY LOG FOR THE SECOND WEEK

Day & Date	Brief description of the daily activity	Learning Outcome	Person In-Charge Signature
Day - 1	I have done went to the selected area	I found out how much the area	Rajin
Day - 2	I Selected so things there	I learn how to choose the house help volunteer	Rajin
Day - 3	I met the volunteers there and found out the different there	I learned how to take problems with volunteers	Rajin
Day - 4	I met them there and learned some more mistakes	Apart from the volunteers my self I learned this to	Rajin
Day - 5	I choose the topic depending on the situ- - alon there	I learned which topic to choose the problems.	Rajin
Day - 6	The topic is Gay consen in I have prepared 25 Speeches about it	I learned how to prepare random topic	Rajin

WEEKLY REPORT

WEEK - 2 (From Dt..... to Dt.....)

Objective of the Activity Done:

Detailed Report:

we want to be selected area picking
the area arrives to us I went there
I the conditions after visiting
that area the conditions and
Surrounding area not right. There is
no cleaner no one used to natural
power. There is no unity where ever
the peoples are. it seemed that no
one has any responsibility to words
the government that's why not
I got I know the volunteers there
and got to know the problems
there I meet any volunteers There
after exploring the topic Every contri-
butions after exploring the topic
well I wrote in summary I have
understand it clear about the total
Speakers to my sis - told after
correcting

Page No:

ACTIVITY LOG FOR THE THIRD WEEK

Day & Date	Brief description of the daily activity	Learning Outcome	Person In-Charge Signature
Day - 1	I have done your survey of them today I have worked out	I learned how to do a survey to be have doing	Rajin
Day - 2	I surveyed I have today I did completed my work at 1:30 in the	I learned how to do while dignity - take photos,	Rajin
Day - 3	I have 2 hours today I did 2 hours work in the evening	I learned how to do survey how to behave while	Rajin
Day - 4	I surveyed 8 hours today I did 1:30 hours work in the evening	I learned how to do a survey how which days work	Rajin
Day - 5	I surveyed 10 hours today I did 2:30 hours work in the morning	I learned how to do a survey in area	Rajin
Day - 6	I surveyed 8 hours today I did 1 hour work in the evening	how to survey in surroundings,	Rajin

WEEKLY REPORT

WEEK - 3 (From Dt..... to Dt.....)

Objective of the Activity Done: It includes the prementation of

Detailed Report: our exp at work & level individual

In this 1 week went to survey with questions prepared by me & Survey & houses on the first day, Surveyed for 2 hours in the morning I took photos when video asked them on this second day I Surveyed houses this time I did full Survey on the third day Surveyed on fourth day, I also takes photos on every day I ask them to make them then I Surveyed my to her all the gave good answers made my Survey Everyone treated me well as this is no looked with a 'Sawa or with area, I gave them answers this Survey is good & nice and very pleasuring of Surveying to surrounding people

Page No:

ACTIVITY LOG FOR THE FORTH WEEK

Day & Date	Brief description of the daily activity	Learning Outcome	Person In-Charge Signature
Day - 1	I have take the details related to 50 houses surveyed.	I learned what details to take while surveying	Rajin
Day - 2	According to what they said to me. I took out of percentages involve	I have know how to find percentage spending	Rajin
Day - 3	Depend on the problems I new them in clothes and graphs	I learned how to solved those problems	Rajin
Day - 4	I found out when problems there and gave answer to them	I learned how to work after today videos	Rajin
Day - 5	I done the took photos and videos I new in the report	I learned how to arrange the page of CSP	Rajin
Day - 6	I Submitted to the Sir.	I learned to how to prepare of my details	Rajin

WEEKLY REPORT

WEEK - 4 (From Dt..... to Dt.....)

Objective of the Activity Done:

Detailed Report:

I asked you how to prepare a based on the details what I am preparing. I took detailing of my 50 hours to write down the answers what they showed me. I wrote the problems they wanted so that they can understand based on the problems mentioned by percentage. I have drawn charts and graphs based on it. I picked up percentage. I exchanged more problems later I wrote it separately in my report. I did that photo and videos upload. There are mistakes I have written the front page well so that don't. Similarly all the members of group of the report like books, the we made the last for many days experience reporting the work.

Page No:

**S.G.K. GOVERNMENT DEGREE COLLEGE, VINUKONDA,
PALANADU DISTRICT
COMMUNITY SERVICE PROJECT**

NAME OF THE MENTOR: B.NAGESWARA RAO, LECTURER IN PHYSICS

NAME OF THE CSP : AWARENESS ON ENERGY CONSERVATION

Primary Information

❖ **Student Details:**

Name: P. Chandrakala Group: B.Sc (MPC)

Hall Ticket No: 203099074 Phone No: 8688701373

❖ **Surveying Area Details:**

Village/Ward Name: SC-colony

Date: 3/3/22

Time: 6:00pm

❖ **Person Contacted for Survey: Name:**

House No: 1-07

Caste: Gen ☐ BC ☒ SC ☐ ST ☐

Income: < 1 Lakh ☒ 1-4 lakhs ☒ 4-8 lakhs ☒ 8 lakhs ☐

Type of House Building: Hut / Semi Pucca/ Pucca/ Apartment/ Bungalow

Nature of House building: Own/ Rented

Family Details:

S.No	Name of the Family member	Gender	Age	Education	Profession
1	Y. Lingaiah	male	52	ALO	Farmer
2	Y. Narayanas	female	48	ALO	coalte
3	Y. Jagann	male	28	B.Tech	private job

Health Details:

(i) Diseases in family:

(ii) Source of treatment: Govt. Hospital/ Private Hospital/Traditional Medicine

(iii) Any PH Persons in family: Yes/ No

S.no.	Name of the person	Gender	Age	Nature of Disability
1	—	—	—	—

COMMUNITY SERVICE PROJECT

Survey Questionnaire:

1. Do you live in own house or Rented house ?
a) Own ☒ b) Rented c) Govt. Quarters d) Others
2. How many rooms are available in your home?
☒ a) Two b) Three c) Four d) Five or more
3. Which type of Energy forms do you use in your house ?
a) Electrical b) L.P.G or Natural gas ☒ c) Solar d) Petroleum e) All
4. Which type of Electrical appliances do you have in your home ?
a) TV ☒ b) Washing machine c) Refrigerator d) A.C
5. Whether the Electrical appliances in your home are Rated electrical appliances or Not ?
☒ a) Yes b) No
6. Do you have any of these Energy efficiency measures installed in your home ?
☒ a) Insulation – Cavity walls, Floors, etc... b) Draught proofing of the windows and doors
c) Use Of low voltage lamps d) Insulation of the hot water cylinder
7. How much electricity consumption do you get per month?
a) <100 units ☒ b) 100-150 Units c) 150-200 Units d) >200 Units
8. What Kind of Light bulbs do you have in your house ?
☒ a) L.E.D b) C.F.L c) Incandescent d) Halogen
9. What are the average usage hours of Electrical bulbs per day in your house 10?
10. Do you turn off the lights when they are not in use Yes?
11. Did you observe any change in the electrical consumption with normal lights / Electrical appliances to L.E.D / rated appliances?
☒ a) Yes b) No
12. Which type of Energy mainly used for cooking purpose?
a) Electrical b) L.P.G ☒ c) wood fuel d) Others
13. Do you have Gas connection or Not for your house?
☒ a) Yes b) No c) Yes but not in use
14. How many Gas cylinders were used throughout the year? / 0
15. Do you have microwave oven

- a) ~~Yes~~ b) No c) No idea regarding this
16. How many Vehicles do you have in your house ?
a) ~~One~~ b) Two c) Three d) More than 3
17. How much money did you spent on Petroleum / Diesel in the last 10 months 16,500
18. Do you feel whether Energy should be saved for Future Generations?
a) Yes b) ~~No~~
19. If Conventional energy resources are exploited what will you do
a) ~~Alternate energy source~~ b) Will not be exploited c) Not known
20. Do you feel better if you have alternate energy resources?
a) Yes b) ~~No~~
21. If alternate energy resources are available do you like to use them?
a) ~~Yes~~ b) No
22. Do you know the difference between Renewable and Non renewable resources?
a) ~~Yes~~ b) No
23. Do you know any Renewable energy resources mentioned below:
a) Solar energy b) ~~Wind power~~ c) Tidal energy d) Bio Energy
24. Do you know about the Solar energy?
a) Yes b) ~~No~~
25. Have you heard about Electrical vehicles?
a) ~~Yes~~ b) No
26. Do you feel your area is suitable for Wind power generation?
a) Yes b) ~~No~~
27. Do you know how to produce Bio fuel?
a) ~~Yes~~ b) No
28. Do you know about Tidal energy?
a) Yes b) ~~No~~
29. Do you think the energy production from Non conventional energy resources will be available at Normal cost or Not?
a) ~~Yes~~ b) ~~No~~
30. Do you believe that Govt. will support in using these type of energy resources? yes or no NO

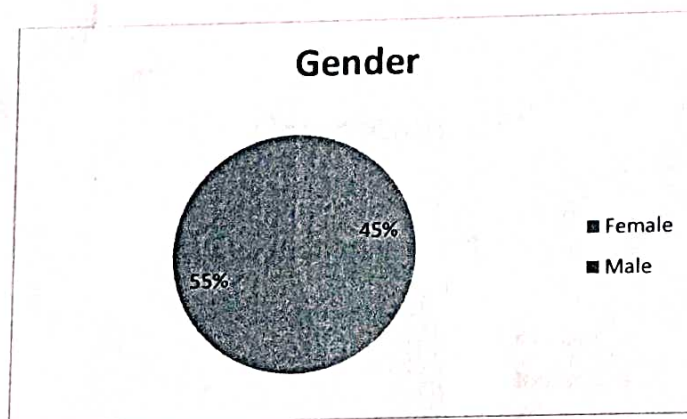
Socio - Economic Survey of the village / Habitation.

In this Community Service Project, presently this report aiming to analyses the combined list of educated and uneducated households living in urban areas. We first tried to know the basic data of households. In this connection, approximately 50 good samples are collected from the town of KOTCHERLA and used to further analysis studies. This survey is mainly divided into two parts as Primary data and Project Data. In the primary data, we started surveying mainly about four aspects. They are Gender, Age group, Educational Qualification and Occupation of the Households. We continued the survey through some options in each aspect. Approximately 55 percent females and remaining percent males participated in this project. Among the 55 percent of females, approximately 43% were adult women and 12 % were child women. In the case of 45 percent of men, it means 24 percent of all adult men and 21 percent of children less than 15 years of age participated. We collected 12 percent of those with less than a SSC, 43 percent of those with an intermediate or higher education, and 9 percent of those with a PG or Ph.D. The remaining percent were uneducated. At the end, the final aspect of occupation included 36 percent of daily wage labor, 46 percent of agriculture, and the rest were doing some business. All the above mentioned datapoints were shown in both tabular and pie chart models for better understanding.

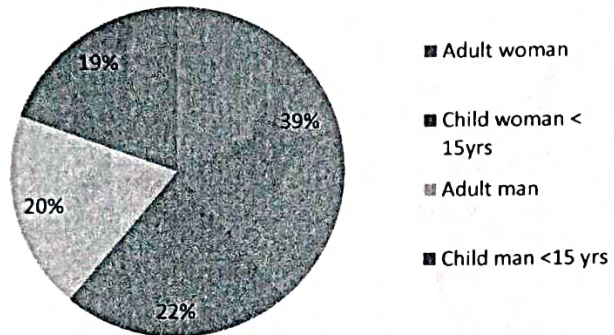
S.No	Name of the Characteristics	Nature	No. of Households	Percentage
1	Gender	Male	75	45.45
		Female	90	54.54
	Age	Adult Women	70	42.42

2		Adult Men	40	24.24
		Child Women (Under 15 Y)	20	12.12
		Child Men (Under 15 Y)	35	21.21
		Below SSC	20	12.12
3	Literacy	Intermediate and above	70	42.42
		PG & Ph.D.	15	9.09
		Uneducated	60	36.36
		Labour	40	36.36
4	Occupation	Agriculture	50	45.45
		Businessman	20	18.18

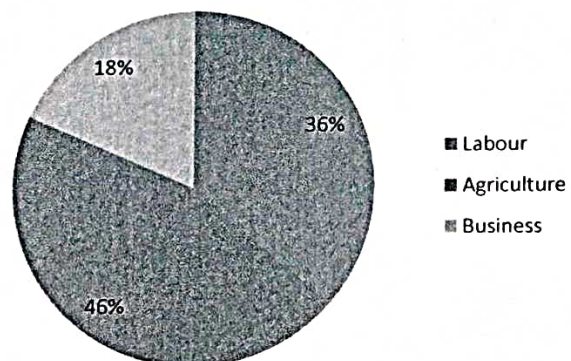
Table 1: Socio-Economic Survey of the KOTCHERLA village



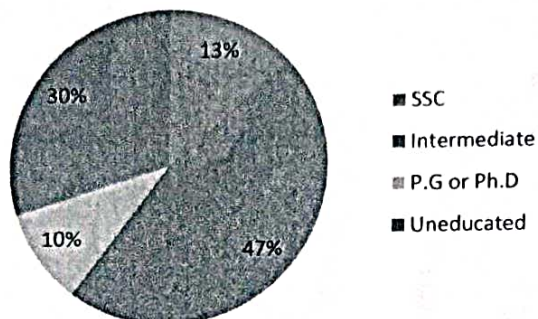
Age



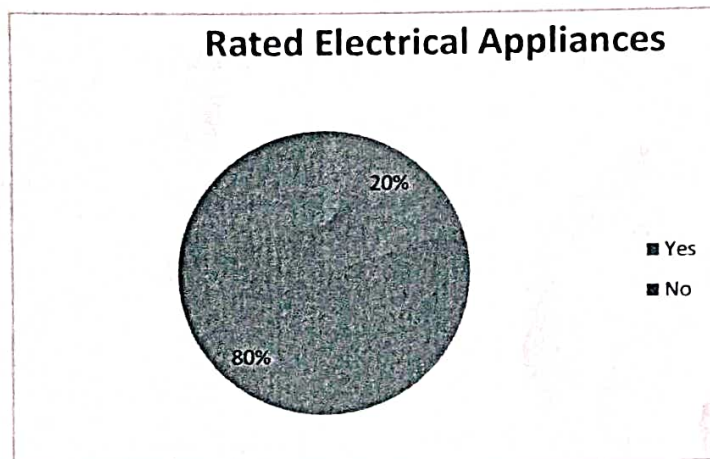
Occupation



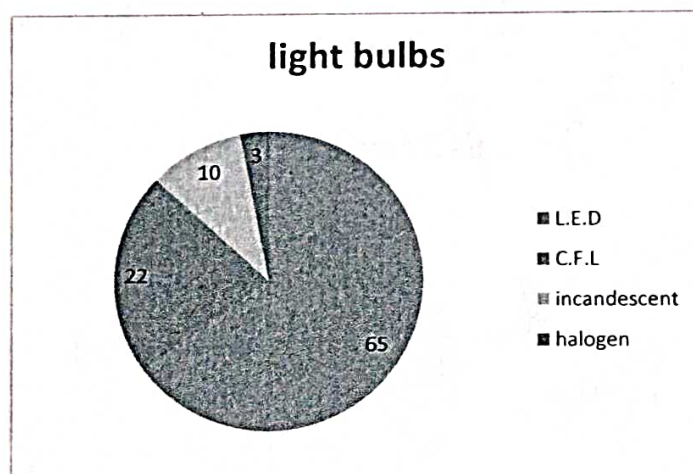
Literacy



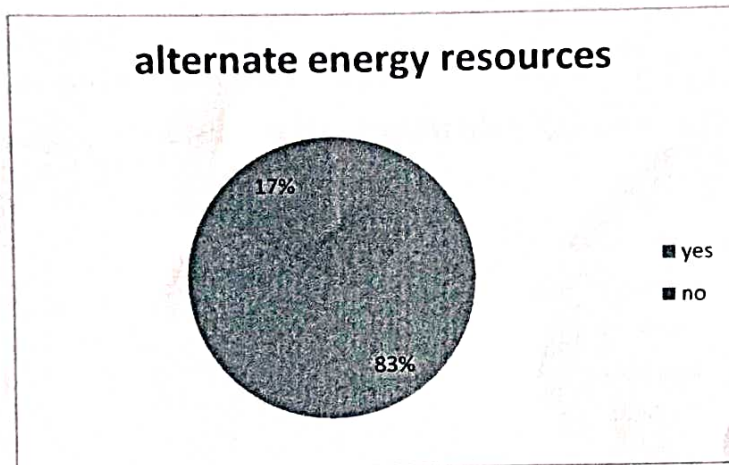
Whether the Electrical appliances in your home are rated Electrical appliances or not?



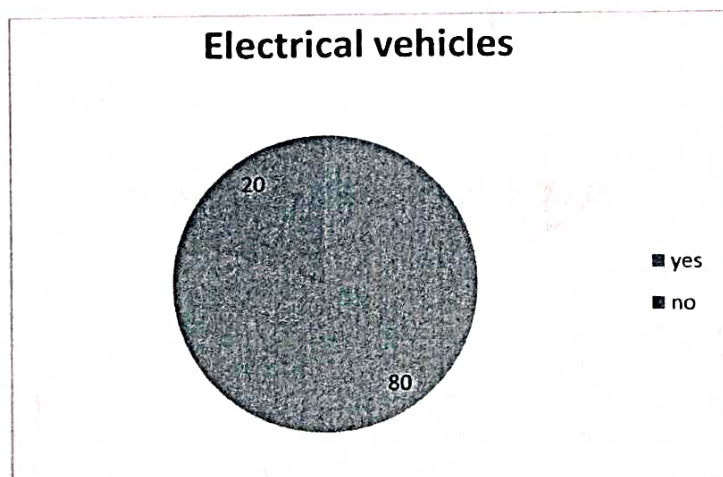
What kind of light bulbs do you have in your house?



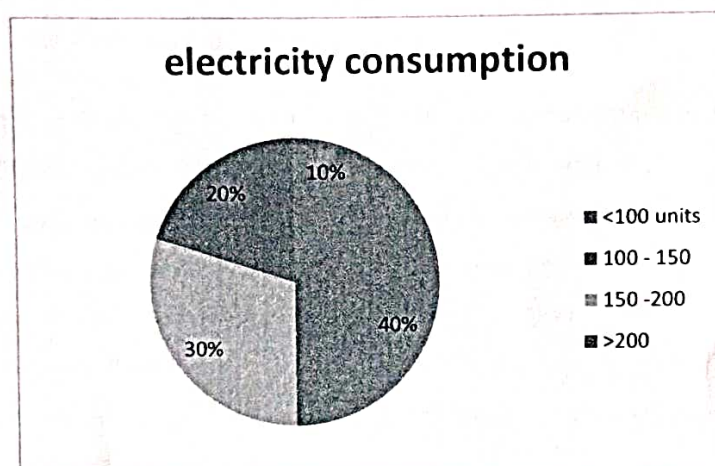
Do you feel better if you have alternate energy resources?



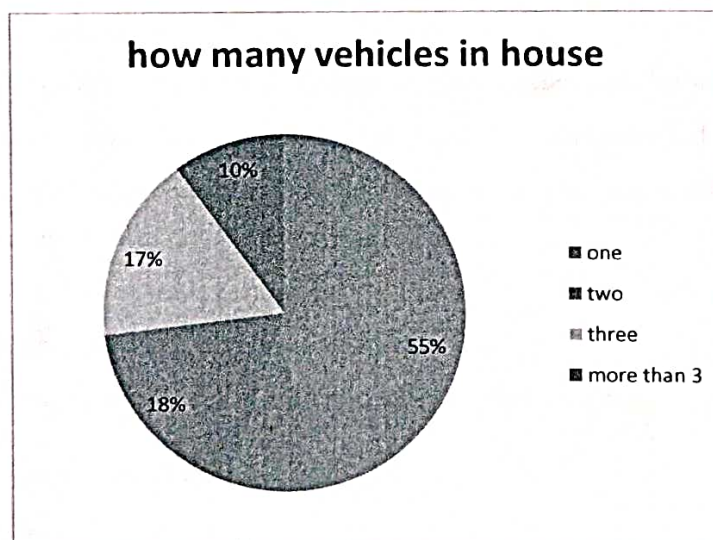
Have you heard about Electrical vehicles?



How much electricity consumption do you get per month?



How much vehicles do you have in your house?



Recommendations

How we conserve energy

Best Ways to Conserve Energy in Daily Life

- Adjust your day-to-day behaviors to turn off devices and appliances when not in use. Purchase devices and appliances which consume less energy.
- Adapt smart power strips: Do you know power or energy is consumed when the appliances are not in use. Yes, appliances draw power from outlets and are referred to as phantom loads. These smart power strips will help to cut down on phantom-load costs and save energy.
- Refrigerators are one of the main appliances that consume power. Keep the setting of the refrigerator low to save energy.
- Using CFL and LED bulbs to save energy. Regular incandescent bulbs consume more energy than CFL and LED.
- Clean or replace air filters as recommended. Air conditioners (AC) and heaters consume more energy than other appliances. Cleaning or replacing air filters improves efficiency and consumes less energy.
- Operate dishwasher and washing machines in a full load. To get the most energy-saving use from each run cycle.
- Using a laptop instead of desktop computers can save considerable energy.
- Install water-saver showerheads to help with conserving hot water and save power.
- Use a slow cooker, toaster oven, or microwave oven over a conventional oven. Also, use utensils made of ceramic and glass.
- Cycling is the best way to save fuel.
- Walking instead of driving also saves energy.
- Skip the dryer on a breezy day and dry clothes on the clothesline.

Benefits of Conservation of Energy

Energy conservation helps in:

- Saves the cost and lowers your utility bills.

- Prolongs the existence of fossil fuels.
- Protects the environment.
- Reduces pollution.

Energy conservation in the kitchen

1. Turn off the heat a few minutes early

Turn the oven off a few minutes early, and the heat will continue to cook the food as you plate up. This also applies to the stove when boiling food (just don't make the mistake of leaving poached eggs in hot water – they will quickly become hard-boiled!).

2. Dishwasher Tetris

Who likes playing Tetris with plates and bowls in the dishwasher? No one. It's important to only run the dishwasher when full to reduce usage, but not to the point where you can't get the door shut! Over stacking can prevent dishes getting clean and results in you having to wash them again, therefore using more energy and water.

3. Energy conscious globes

When it comes to changing light bulbs, why go old-school? Use energy-efficient globes, it's the way of the future!

4. Seal the doors

Doors are used to trap the heat in an oven and the cold in a fridge or freezer. Yet many people neglect the seals, creating a sneaky escape route. But how do you know if your seals are effective? Simply place a piece of paper between the door seals and the door. If the paper moves in and out easily then the seal isn't doing its job. Try adjusting the door first, otherwise you'll need to replace the seals.

5. Love your appliances

Appliances tend to use less energy than the stove, so put the kettle on and let's have a cup of tea.

6. Defrost before cooking

Plan ahead and put your frozen food in the fridge to defrost, reducing the energy used by your microwave or oven.

7. Dry your dishes the old-fashioned way

Forget about using the dry cycle, just open the dishwasher door and let your plates air-dry (just don't let the dog lick them, they may burn their tongue).

8. Choose your burner

It may seem insignificant, but using a burner that is too large for your pan can waste a lot of energy. If you are restricted by the number of burners (maybe your household likes to cook separately), turn down the flame so that it does not escape around the edges.

9. Water waste

Do you really need to fill your saucepan or kettle to the top? Use the minimum amount of water when boiling food or preparing that cup of tea. The more water you use, the more energy is required to bring water to the boil. If you only need one cup of water, measure it out using a cup and add just a little extra due to evaporation or spillage.

10. Portion control

No, we're not saying you should go on a diet...Chop your vegetables into smaller pieces when boiling to reduce cooking time. Simple but effective, especially when you have a hungry family waiting.

Energy conservation in the house

Turn off appliances

When an appliance is on standby, it still consumes power. This is why you should turn off the switch of your TV, desktop, phone charger, and even your microwave when it isn't being used. This will help you save energy at home. If a room has many appliances that are often used all at once, you may forget to turn off each switch. In this case, it may be more convenient to plug them all into a power strip. For example, you can plug in an electric fan, desktop computer, printer, and charger, and turn a single switch off when you're leaving the room.

Use cold water

A lot of electricity goes into heating up water. That's why using cold water for your showers and in your washing machines is a great way to save electricity. Most clothes are designed to withstand cold washes, and detergents nowadays work just the same in cold water as they do in warm water.

Insulate your home properly

On the other hand, hot showers in the winter are unavoidable. However, a lot of heat is lost from pipes and heaters, no matter how long you leave the geyser on. Reduce standby heat loss significantly by adding insulating blankets to your bathroom's water heaters. This will help keep the water hot for longer, helping you save energy at home as you won't have to keep it turned on for very long. If you experience winter where you live, you should also consider upgrading the insulation on your windows and sealing cracks through which air circulates. Doing so will help trap heat in the house, reducing the amount you use your heater. The same goes for summers – you'll find you use your air conditioner less once the cool air stops escaping through the cracks and gaps.

Run full loads

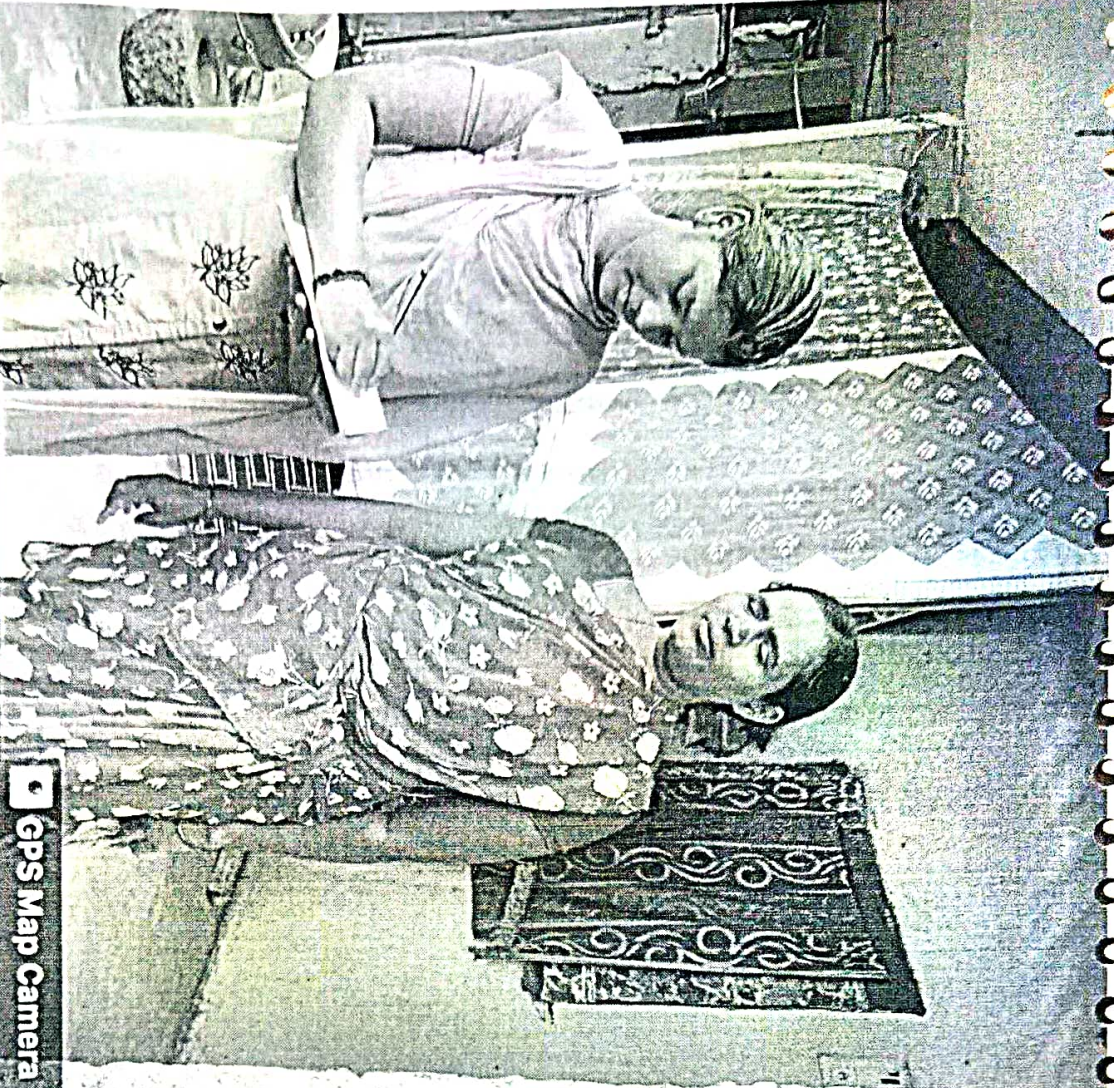
Another significant way to conserve energy is to run the dishwasher and washing machine with full loads. Running them half-full is both a waste of water and electricity. In case you find this cannot be helped, consider investing in a smarter appliance, which can estimate how much water to use for a shorter cycle based on how many clothes or dishes you put inside. You can also add aerators to faucets around the house to save water.

Upgrade and maintain utilities

It's also important to properly maintain major appliances around the house which consume a lot of electricity. Cleaning or changing your air conditioners filters every few months will go a long way in saving energy around the house. This is because dirt will slow down airflow, which causes the unit to work harder and use more energy. The same goes for cleaning out the lint trap of your washing machine in between cycles. If your appliance is extremely old, it would be best to swap it out for a new appliance since older ones consume more energy as they work a lot harder to function, no matter how much you maintain them.

Opt to air-dry

There are many ways we use dryers around the house. We use dryers for our clothes, dishes, and even our hair. But the eco-friendly alternative would be to air-dry all of them. Towel dries your hair after washing it, or simply sits under a fan for a while. This is a very simple way to save electricity. For your dishes and clothes, buy drying racks and put up clotheslines or drying stands out on a terrace or in a balcony. Many clotheslines are available as attachments that you can place overhead in a balcony, allowing you to lower them with a drawstring to fan out clothes, and then pull back up to keep clothes out of the sun to prevent fading. Stands are also most often foldable to help you save space. These energy-saving tips will help you cut costs drastically at an economical charge, and will also help you incorporate sustainable living in your life with ease.



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