

**G. P. Porwal Arts, Commerce and V V Salimath Science  
College Sindagi**

**DEPARTMENT OF PHYSICS**

“ A dissertation submitted to RANI CHANNAMMA UNIVERSITY  
VIDYASANGAMA , BELAGAVI in partial fulfillment for the award  
degree of Bachelor of Science in Physics

**PROJECT REPORT ON - “ CONSERVATION OF RENEWABLE  
ENERGY SOURCES ”**

**Project guides.**

**HOD of Physics**

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**Certificate**

This is to that, the dissertation on the project work entitled **“Conservation of renewable energy sources”** Submitted by **Akshata Andeli** to G.P.Porwal arts, commerce and V.V.Salimath science college Sindagi By student of first semester BSc in Physics course under my guidance.This project is submitted to partial fulfillment of requirement for the award of Bachelor of Science in Physics G.P.Porwal arts,commerce and V.V.Salimath science college Sindagi under my guidance during academic year 2022 – 2023

Project guide

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## *Introduction:*

- Energy may be defined as any property, which can be, produced form or converted into work.
- In to day's world for any development energy is perquisite. Life is unthinkable without energy.
- Not only all the comforts of modern life, but also the necessities not possible without energy.
- Both energy production and energy utilization are the indicators of our country progress.
- Industrial developments, textile manufacture, construction of buildings, water supply and even large-scale food production are not possible without adequate supply of energy.

## *The types of renewable energy or non conventional energy resources :*

- Wind Energy.
- Geo Thermal Energy.
- Min Hydel Generation
- Ocean Energy
- Tidal Energy
- Solar Energy

## Source of energy

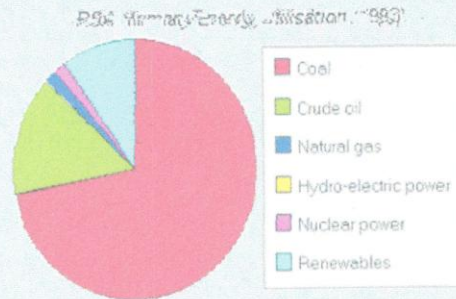
Our major source of energy today is the combustion of fossil fuels such as coal, natural gas & petroleum are used directly by us.

Development of gas turbine & the internal combustion engines has made it possible to use the heat involved in combustion of fuels to generate electric & mechanical energy. It appears that we will run out of petroleum and natural gas by about 2020 unless domestic supplies are extended by taking one or more of the following steps :-

**Reduce the consumption of fuels**

**Use of more coal**

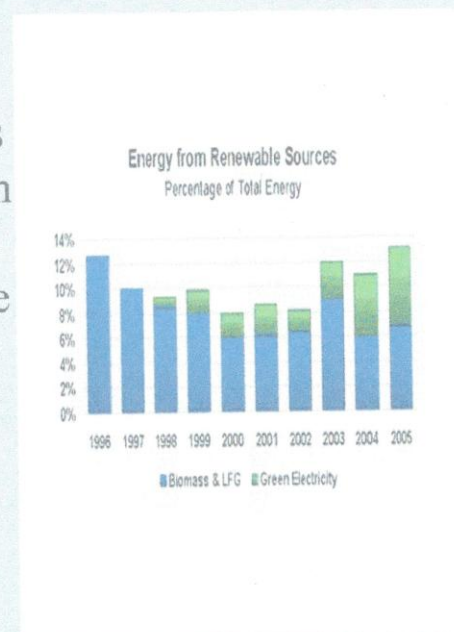
**Develop New sources of energy**



## Renewable and Non-renewable sources of energy

Wood, wind energy, solar energy, tidal energy, Hydel power, bio-bas gas, bio mass, nuclear fusion, ocean currents, Geo thermal energy, vegetable refuse etc, are some of the examples for renewable sources of energy.

Coal, Ores, Petroleum, timbers, natural gas, lignite, uranium Etc., are some of examples for non-renewable source of energy.



*Different forms of commercial energy in main sectors (%)*

Sector	Year	Electricity	Coal	Oil/Gas
Industry	1990-91	17.3	69.96	13.1
	1996-97	19.2	69.21	11.5
Transport	1990-91	1.5	9.6	89.0
	1996-97	1.4	4.0	94.7
Household	1990-91	19.0	3.9	77.1
	1996-97	23.8	7.2	69.0
Agriculture	1990-91	43.0	-	57.1
	1996-97	49.8	-	50.3
Others	1990-91	70.8	-	29.2
	1996-97	51.9	-	48.2

*The Conventional sources of energy are needed because:*

- To provide more energy to meet the requirements of increasing population.
- To reduce environmental pollution, and
- To reduce safety and security risks associated with the use of nuclear energy.

## *Conservation of energy:*

Energy conservation is enough cost effective. There is scope in every sector of the economy to improve efficient of energy use.

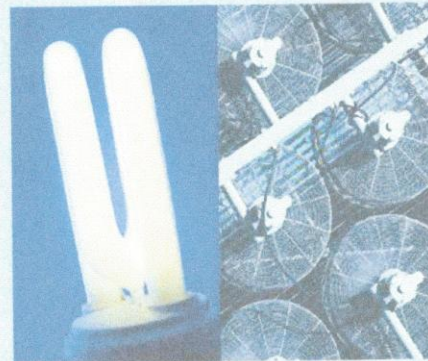
The government of India has offered a variety of Fiscal concessions to encourage energy saving measures by Industries and IDBI provide soft loans for such measures.

Energy conservation will receive greater attention by industrial managers. There is plenty of room for energy conservation in other sector too.

Most of the renewable technologies are suited for small-scale, decentralized energy generation.

There is no agency in the Government of India charged with responsibility for orchestrating energy policy & monitoring implementation.

A separate department of energy as a part of the cabinet secretariat may be an appropriate mechanism. In the nutshell, we need greater awareness of the gravity of the emerging energy scenario & to search the mean of energy conservation.



## *Wind energy*

Although renewable energy is a resource few option for the crises, the wind energy is a very important non-conventional source of energy. The wind has got the capacity to serve as a renewable source of energy for the benefit of human beings. In India the wind power is of great significance as there are large coastal, hilly & desert areas where wind energy can be usefully exploited for the generation of electricity and water pumping.



In order to develop renewable sources, the government is providing various incentives such as, 100% depreciation.

Free import duty for certain components for manufacture of wind turbines.

Exemption from excise duty & sales tax etc.

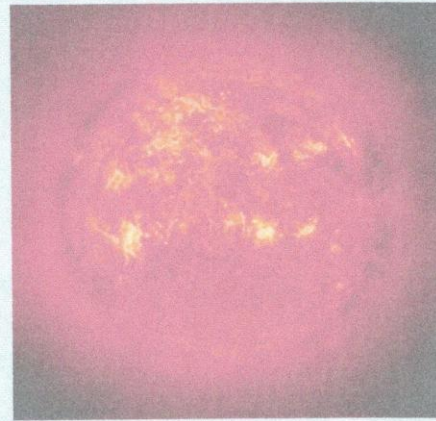
### *Advantages of wind power:*

- The gestation period is low & power generation starts from commissioning once generation starts, cost free power is available.
- They can generate power immediately after installation.
- Power generation is cheaper because there is not shortage of input cost & recurring expenses are almost nil.
- Wind energy is environmental friendly and pollution free.
- Generation is continuous unlike in diesel power. Investment is never idle.



## *Solar energy*

Solar energy, which is the primary source of all energy forms on the earth, is the renewable form of energy for us.



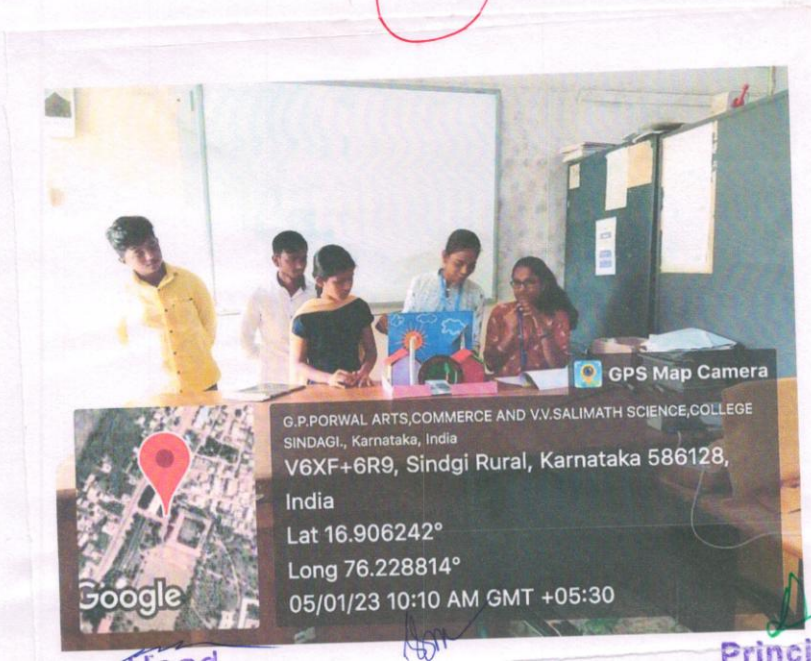
## *Conclusion.*

The future in the field of energy is full of challenges demanding a lot of ingenuity. Although the availability and cost of different forms of energy have a direct effect on the economic and social development of a nation, the choice of energy types depends on a number of factors. For instance, conventional sources being negligible in Ladakh area, geothermal energy may pay the solution. In the Andaman and Nicobar Islands Ocean and tidal energy should prove a viable source of energy.

The reserves of oil and natural gas are limited while the reserves of coal are abundant. So we would have to use coal and fossil fuels more cleanly and efficiently to minimize environmental pollution. Cleaner technologies can help to lessen the green house effect. The future energy strategies should be flexible and rational considering available energy resources and developing efficient technologies for production, supply and its use. Conservation of energy is needed for economic growth and environmental protection.



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Principal.