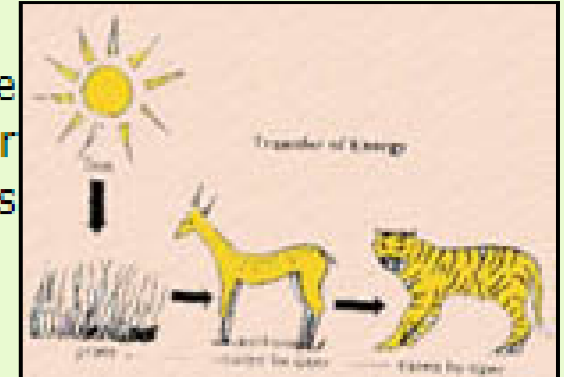


**ENERGY**

The energy used by an organism is converted into heat and is lost from the ecosystem. We need energy constantly. The food we eat in the morning is our source of energy but it is lost or spent during the day's activities. Energy is transferred from one organism to another but it is never created or destroyed.



**SOURCES OF ENERGY**

- Electricity
- Oil
- Coal products
- Firewood
- Animal dung
- Others
- LPG is used as a fuel mainly in cities with a population of over 50,000.)
- Thermal - more than 60%
- Hydel - 35%
- Nuclear - 3%

**Requirement in 1980-1985**

- 94 million tonnes of coal
- 32 million tonnes of oil
- 221 billion units of electricity

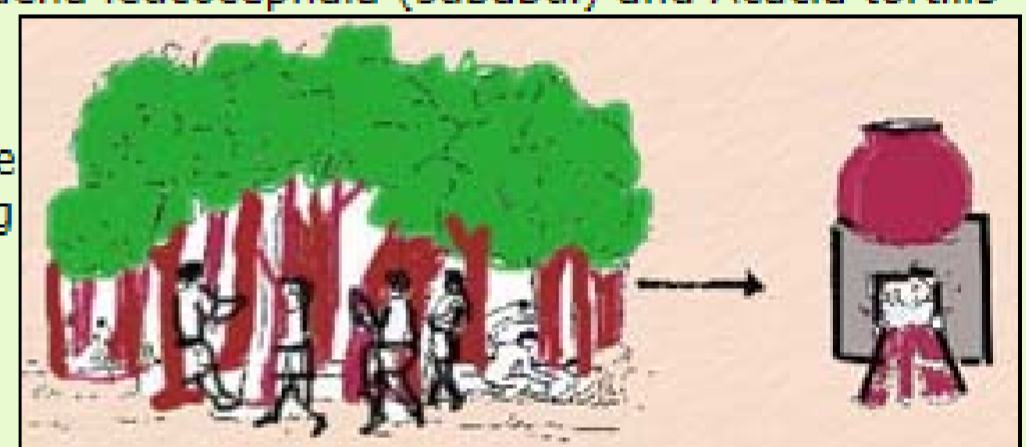
**Requirement in 2004-2005 A.D.**

- 450 million tonnes of coal
- 94 million tonnes of oil
- 919 billion units of electricity

**ALTERNATIVE FORMS OF ENERGY PRODUCTION**

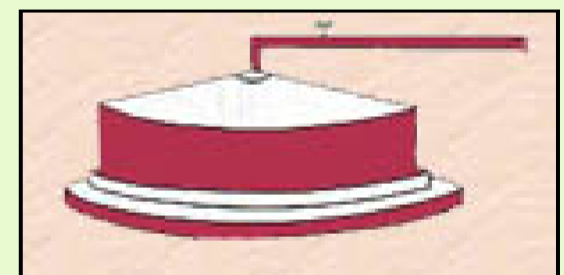
**Energy Plantation**

- India can obtain a rich harvest of fuelwood if we can cultivate a portion of the available wasteland for energy plantation by planting tree species which are fast-growing, demand less water and nutrients, and produce less smoke. Some of the species like Casuarina, Prosopis juliflora, Leucaena leucocephala (subabul) and Acacia tortilis (babul) can be planted extensively.
- These plantations would be able to supply firewood for the cooking requirements of the nation since firewood remains the major source of energy for cooking energy in India, providing 50% of the cooking energy in cities and 70% in villages.



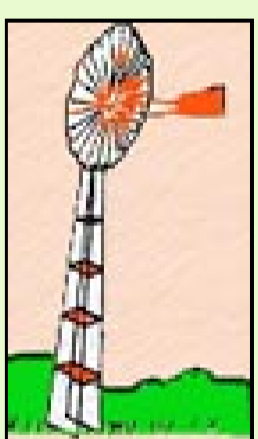
**Installation of Community Biogas Plants**

- Biogas is a product of decomposed animal waste and is a very cheap alternative to meet our fuel requirements for cooking. In many parts of the country biogas has been used successfully. Instead of burning cattle dung directly it is better to feed them to biogas plants. The residue is a rich source of nutrients and can be used as fertiliser.
- Biogas plants are not only used to derive cooking energy but also for generating electricity which is used for lighting up villages. It is estimated that India has the raw material the dung to meet one third of the cooking requirements of the country.



**Wind Energy**

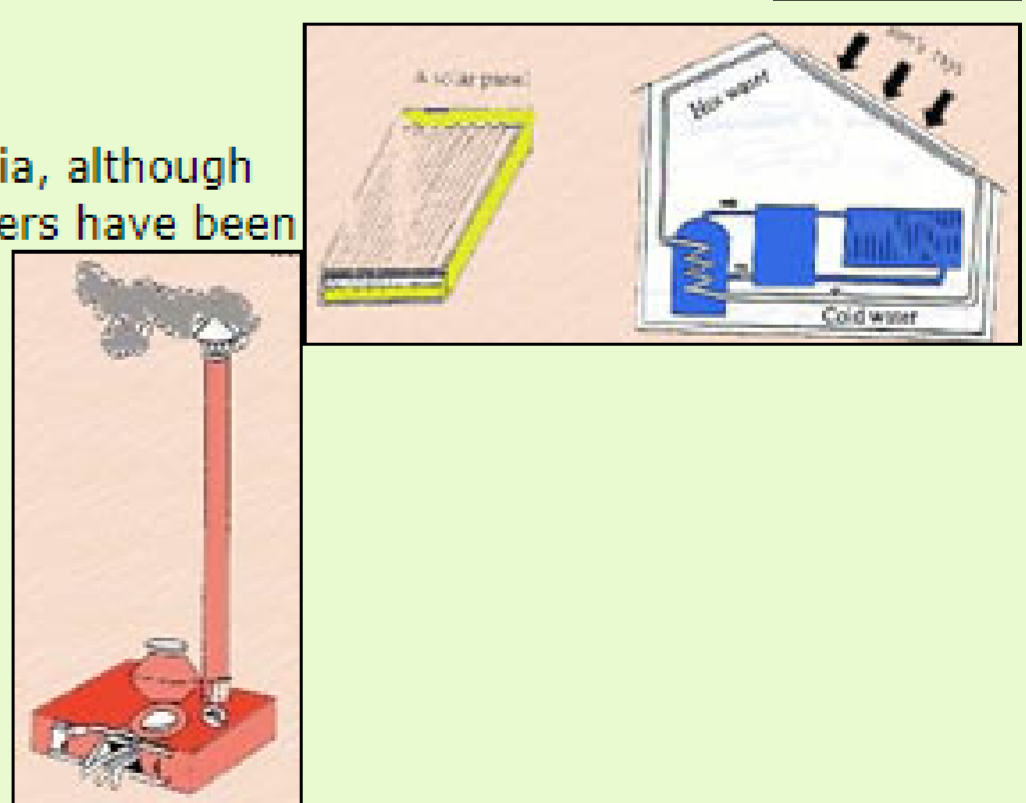
- Windmills are used to operate pumps for drawing water from wells in rural areas. Where there are a series of windmills in open country, electricity is generated for use by the surrounding farms and dwellings.
- On an experimental scale, windmills have been successful in India. Energy from the wind is clean and renewable, particularly in coastal areas where there is a strong seabreeze for a major part of the day.



**Solar Energy**

- Energy from the sun can be harnessed in tropical countries like India, although cheaper methods have yet to evolve. Solar cookers and water heaters have been developed, but they are not very popular due to several reasons.
- The time taken to cook food is much longer.
- These cookers are effective only in the day time, while cooking in an average Indian is done early morning or late evening when the sun's rays are not powerful.
- The initial investment is too high for the average Indian.

Harvesting solar energy through the use of photovoltaic cells has been effectively demonstrated but it is not within the reach of the common man.



**Do's**

- Use only a fuel efficient stove such as a smokeless chulha.

			
Cut only the dry branches of trees	Switch off lights and gadgets when not in use	Share a vehicle	Maintain your vehicle

**Don'ts**

- Use a smoking stove. You are wasting energy, besides which it is a health hazard.
- Cut the whole tree, even if a contractor offers a good price. The money will be spent soon and you will have no source of firewood.
- Leave lights and fans on for safety.
- Use a vehicle when it is not required.