



## 4. ADVANTAGES AND DISADVANTAGES

4. To understand the advantages and disadvantages of using conventional sources of energy.

# COAL

## Advantages

- Coal can be found in lots of places in the world.
- Coal can be easily transported to the power stations.
- Coal is a relatively cheap energy source.

## Disadvantages

- To dig up coal, we have to create mines which can be dangerous and not very nice to look at.
- Transporting coal by lorry and train from the mine to the power station causes pollution.
- Burning coal produces polluting gases like sulphur dioxide which make acid rain.
- Of all energy sources, burning coal releases the most greenhouse gases which may add to global warming.
- Coal is a non-renewable source and will run out in about 100 years.
- Coal miners can be affected by black lung disease or pneumoconiosis and also emphysema if they breathe in too much of the coal dust.



# OIL (PETROLEUM)

## Advantages

- Oil is found in lots of places in the world.
- We can transport oil in pipes and by using tankers or ships.

## Disadvantages

- Environmental damage can be caused when building the rig and by accidental oil spillages.
- Oil is not renewable, so once the supplies are used, it will run out.
- Burning these fuels releases greenhouse gases into the air. This may add to global warming.





# NATURAL GAS

## Advantages

- Natural gas is more environmentally friendly than coal or oil. It is composed of methane, which has just one carbon, producing very low carbon emissions. Natural gas emits an estimated 70% less carbon dioxide than other fuels. Natural gas burns cleaner than heating oil, and does not leave product, like ash, behind.
- Natural gas is very popular, and the major source of energy for most consumers. It is conveniently pumped to homes across the country through a network of underground pipeline. It is provided through a local providers and utility companies.



## Disadvantages

- Due to its make-up, natural gas is combustible and easily explosive if handled improperly. With a leak, the gas builds up within a room or structure. When that gas is ignited it causes an explosion. The severity of the explosion depends upon the amount of the leak.
- Natural gas is toxic if inhaled, leading to severe health risk or even death.



# NUCLEAR POWER

## ◦ Advantages

- Nuclear fuel does not make harmful greenhouse gases.
- You only need a very small amount of nuclear fuel to make a lot of energy

## ◦ Disadvantages

- The waste that is produced when using nuclear fuel is radioactive and very harmful. It needs
- to be disposed of carefully
- Nuclear power stations are at risk from terrorist attack and sabotage.
- World uranium supplies may run out in about 50 years.



Uranium is Highly Dangerous

# FIREWOOD

## ◦ ADVANTAGES

- The wood is a renewable resource, offering a sustainable, dependable supply.
- The amount of carbon dioxide ( $\text{CO}_2$ ) emitted during the burning process is typically 90% less than when burning fossil fuel.
- Wood fuel contains minimal amounts of sulphur and heavy metals.

## ◦ DISADVANTAGES

- It provides less heat energy per unit than materials like coal.
- Burning firewood is a very inefficient method of heating a house.
- Firewood produces carbon dioxide and carbon monoxide and other pollutants as well.
- Most of the heat produced goes





# WHY MUST WE CONSERVE FUELS????

- Fossil fuels are a precious resource because they cannot be replaced. So it makes sense to use them carefully, until something else (perhaps nuclear fusion) is developed.
- For the good of the climate and our future viability as a species, we should drastically reduce our usage of and reliance upon fossil fuels within the next decade.

