GREEN HOUSE GASES

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GREEN HOUSE GASES

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INTRODUCTION

- The greenhouse effect is the rise in temperature that the Earth experiences because certain gases in the atmosphere (water vapor, carbon dioxide, nitrous oxide, and methane, for example) trap energy from the sun.

INCOMING RADIATION

- Some trace gases are known as “greenhouse" gases because they function like the glass in a greenhouse
- Incoming radiation strikes the earth and some is absorbed
- This heats the earth and the earth reradiates in the infrared portion of the spectrum

GREENHOUSE GAS PROPERTIES

- Greenhouse gases absorb infrared radiation that corresponds to the vibrational and rotational energy levels of their bonds
- Normally these gases have three or more atoms.

TYPES OF GREEN HOUSE GASES

- CARBON DIOXIDE
- METHANE
- NITROUS OXIDE
- CHLOROFLUROCARBONS
- THESE GASES--TOGETHER WITH WATER VAPOR--CREATE THE NATURAL GREENHOUSE EFFECT
- THEY TRAP SOME OF THE SUN'S ENERGY AND KEEP THE EARTH WARM ENOUGH TO SUSTAIN LIFE

CARBON DIOXIDE

- More than 80% of carbon dioxide emissions are caused by :
  - Burning fossil fuels in industries
  - Cutting down and burning trees
  - Thermal power plants and automobiles.

- Deforestation accounts for about 20 percent of the carbon dioxide increase from human activities

AUTOMOBILE EXHAUST

- Burning One Gallon of Gasoline Generates 22 Pounds of Carbon Dioxide
- When gasoline is burned, the carbon in it combines with oxygen in the air to form carbon dioxide
- Because the oxygen adds weight, the newly formed carbon dioxide weighs more than the original unburned fuel

CARS AND POPULATION INCREASE

- There are over 600 million motor vehicles in the world today
- If present trends continue, the number of cars on Earth will double in the next 30 years

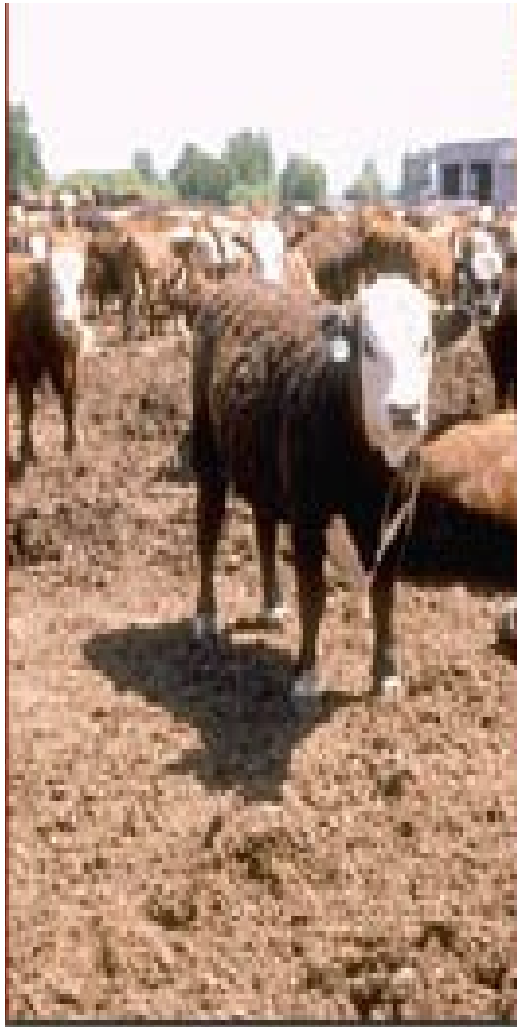
METHANE

- Generated naturally by bacteria ,called methanogens which is habitat in marshes, swamp and wet land soils
- Methane gas escapes from garbage landfills and open dumps
- It also leaks out during mining, extraction and transportation of coal, oil and natural gas

NEW SOURCE OF METHANE

- In 2006, research has shown that permafrost melting in the arctic is releasing methane trapped in formerly frozen sediments
- Permafrost melting is the result of global warming

ANIMALS AND METHANE



- Bacteria in the gut of cattle break down the food these animals eat, converting some of it to methane gas
- Cattle can belch up to a half-pound of methane a day
- Sheep, goats, buffalo and camels also belch methane
- Rapidly growing world population produces greater demand for meat and dairy products
- Number of cattle has doubled in the past 40 years

NITROUS OXIDE

- Nitrous oxide is released naturally from oceans and by bacteria in soils
- Each year we add 7 to 13 million tons of nitrous oxide to the atmosphere mainly by:
  - Using nitrogen-based fertilizers
  - Disposing of human and animal wastes
  - Automobile exhausts

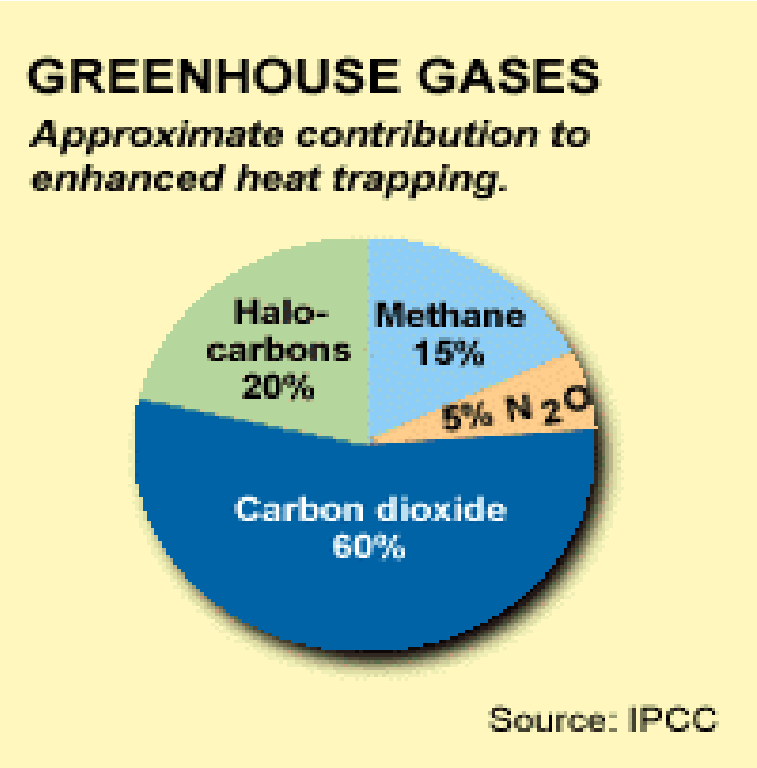
CHEMICAL FERTILIZERS

- Nitrogen-based fertilizer use has doubled in the past 15 years
- Nitrogen fertilizers provide nutrients for crops
- When these fertilizers break down in the soil, nitrous oxide is released into the air

FLUOROCARBONS

- Fluorocarbons come almost entirely from human activities
- Some fluorocarbons, including chlorofluorocarbons (CFCs),CFC along with chlorine and bromine containing compounds also involve in acceleration of ozone hole formation .
- It also result in increasing the amount of hydrogen peroxide in the atmosphere and induce acid rain

EFFECT OF GREENHOUSE GASES



- Chart shows how much warming could be caused by each of the gases that human activities release

A GLOBAL PROBLEM

- An increase in global temperature would bring changes to the entire planet, and therefore to every nation
- This makes it an international issue which needs worldwide study and responses
- Individual countries are each responsible for their own greenhouse gas production

CONTROLING MEASURES

- Reducing the consumption of fossil fuels.
- Afforestation.
- Eco friendly alternative cfc.
- Co2 pumped into underground.
- Bioremediation
- Sulphate aerosols

THANK YOU..