

# Green House Effect:-

⇒ Earth's surface temp increased when  $\text{CO}_2$  and  $\text{H}_2\text{O}$  absorb I.R radiations and then they release the radiations due to which temp of earth increases.

⇒ Increased in the earth's surface temp. due to re-emission of I.R radiation from green house gases such as  $\text{CO}_2$  and  $\text{H}_2\text{O}$  is called Green house effect. It has both beneficial and disaster effect.

⇒ If conc. of  $\text{CO}_2$  becomes double, then average temp. of earth increases upto  $30^\circ\text{F}$  which is a big drastic change.

Sea:- ⇒ Evaporation increases with increase of temp. and oceanic life disturbs. ⇒ lower water has high temp and upper water has low temp. of sea. ⇒ By increasing earth's temp. upper layer's temp. of sea increases and food supply stops from lower layer to upper layer. ⇒ Green house effect is increase in surface of earth temp. due to re-emission of I.R radiations from Green house gases i.e.  $\text{CO}_2$  and  $\text{H}_2\text{O}$ .

→ gradually increase in earth surf temp. due to green gases

## Effects of Green House Effect: Global Warming.

- 1) Shifting of Agricultural lands towards poles.
- 2) Melting of glaciers.
- 3) Floods
- 4) Shortage of food.
- 5) Increase of Sea-level.
- 6) Fast evaporation rate → More warming.
- 7) Drowning of Islands.
- 8) Disruption of food chain in ocean.

### Causes:-

- 1) Burning of fossil fuels like thermal power plants.
  - (b) Internal Combustion engines
  - (c) Industrial Units.
- 2) Deforestation
- 3) Soil Erosion
- 4) Urbanization of Agricultural lands i.e. agricultural lands converted in towns etc.

## Prevention:

7)

1) Suitable Govt. policies.

2) Policies ⇒ (i) Industrial units outside the Urban areas.

(ii) Improved system of local transportation.

(iii) Use of renewable Energy resources.

(iv) Catalytic Conversion of Carbon oxides into other useful forms.

(v) Plantation of trees.

## Carbon Mono-oxide: (CO)

Properties:

Colorless, odourless, tasteless

B.P =  $-192^{\circ}\text{C}$

Conc. gradually increases in atmosphere.

Sources: of CO: -

1) Incomplete Combustion.



Due to incomplete combustion air-fuel ratio is disturbed in industries or Engines.

2) Reaction of  $CO_2$  with Carbon at High temperature.



3) Agriculture Burning.

### Natural Sources:

- ① Forest fires.
- ② Volcanoes.
- ③ Electric lightening.
- ④ Emission from swamp or marshy areas.

### Anthropogenic Source:

Burning of fossil fuels. About 70% is due to it.

### Effects:

It causes soya carbon due to dry

absorbed by plants/earth and re-emitted radiations can't move outside the green sheet. So plants convert more  $\text{CO}_2$  into glucose more obtained.

$$\text{CO}_2 = 325 \text{ ppm } (0.0325\%)$$

↓ by doubling the conc.

↓ 3°C rise of temp.

## Sink:

Microbial or microorganisms in soil absorb  $\text{CO}_2$  and convert it into different forms.

## Prevention:-

- ① Replacement of gasoline with other fuels like CNG, or LPG.
- ② Use of renewable resources for powers such as solar energy, wind etc.
- ③ Modification of Engines for complete combustion of fuels, i.e. by adding Catalytic Converters.
  - i)  $\rightarrow$   $\text{NO}_x$  reduced and convert in  $\text{N}_2$  gas.
  - ii) oxidation of  $\text{NO}_2$  at low temp. by using platinum as catalyst.

## Extra:

- Lead gasoline to reduce knocking.
- Lead is poisonous for platinum.
- Lead free gasoline may used.