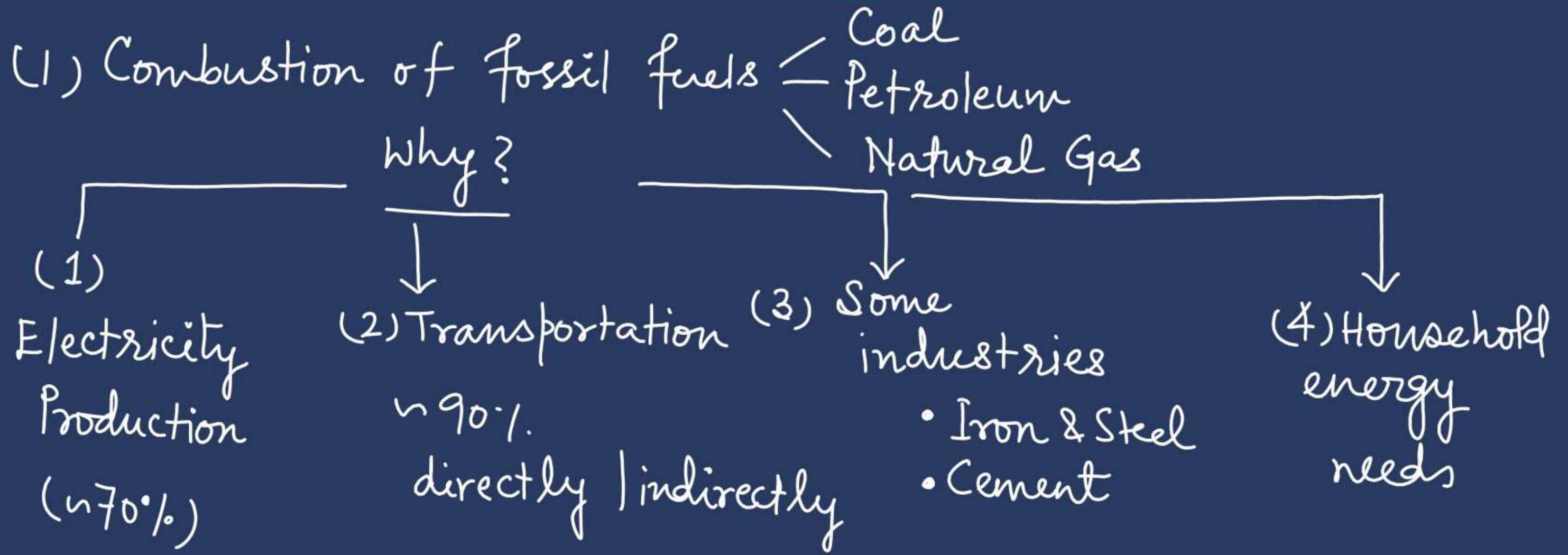


Climate Change

Class - 2

- (1) Human Activities leading to climate change
- (2) Sources of major GHGs
- (3) Impact of climate change

(1) Human activities leading to climate change



(2) Destruction of forests

Results

a) reduction in
CO₂ capture
capacity

b) direct release of
CO₂ from - decomposition
- Combustion

- agriculture

- development

- mining

- settlements

- fires (directly emit
CO₂)

(2) Cultivation & other farm activities

↳ harvest → CO_2 → decomposition
↳ harvest → CO_2 → combustion

↳ paddy farm → CH_4

↳ cattle rearing → CH_4

↳ Fertilizers → N_2O
(esp. \bar{c} NH_3)

(4) Wastes $\begin{cases} \rightarrow \text{Decomposition} \rightarrow \text{CH}_4 \\ \text{CO}_2 \\ \rightarrow \text{Burning} \rightarrow \text{CO}_2 \end{cases}$

(5) Certain industries

\rightarrow Nylon \rightarrow CO_2

\rightarrow Cement \rightarrow $\text{CaCO}_3 \xrightarrow{\text{Heating}} \text{CO}_2$

(6) Increasing use of Industrial Gases

\rightarrow HFC: Compressor Gas in ACs & Refrigerators

\rightarrow SF_6 : Transformers & Power Grids

\rightarrow PFC: Semiconductor & Electronic Industry

(2) Sources of major GHGs

CO_2 → Fossil fuel combustion
Forest fires
Waste degradation & burning
Some industries

CH_4 → Paddy farming
Cattle rearing
Waste Decomposition

N_2O :
→ Fertilizer applicⁿ
→ Meat industry waste
→ Packed food material

- (4) SF_6 → Transformers & Grid Circuit Breakers
- (5) HFCs → Compressor gases for ACs & refrigerators
- (6) PFCs → In electronic & semi-conductor industry

(3) Impact of Climate Change

(1) Intergovernmental Panel on Climate Change (IPCC)

- Est: 1988 - Members: 195
 - Administered by:
 - WMO
 - UN Environment Programme
- ↳ Nobel Peace Prize winning organisation (2007)

- Main work

- Assess the magnitude & impacts of c.c.
- Publishes Assessment Reports (6 to 7 years)
 - 1st AR → 1990
 - Latest AR 6 → 2023
- Does not carry out its own research but does a "Meta-analysis".

Critical Threshold

⇒ 1.5°C rise comp. to pre-industrial levels
(Max desirable)

⇒ Red line

2°C rise comp. to pre-industrial levels

Present status

1.1°C already risen

Outcomes

- (1) Rising temp. — Heat waves
Melting of glaciers
Melting of polar ice caps
Sea level rise
- (2) Sea level rise — Displacement
Coastal ecosystem destruction
Loss of infra.
Economic losses
- (3) Natural disasters — Cyclones & Storms
Freak-weather
 - Cloud-bursts
 - Heavy snow / Blizzard
- (4) Agricultural loss
- (5) Biodiversity loss
- (6) Rise in various vector borne diseases