



# Air Pollution

## THE GAS CHAMBER

### Weather Impact

**1** The low temperature and fog creates a dense blanket-like layer over the atmosphere

SUN

SUN RAYS AND HEAT

**2** Rays from the sun hit this layer and reflect back

**3**

The pressure from the ground pushes wind and dust upwards, but it hits the layer and bounces back to the ground

AIR FLOW

**4**

Because of the lack of vertical movement of wind, the cycle breaks, and the pollutants remain trapped in the air

DENSE BLANKET OF POLLUTION

### Major pollutant sources

11%



#### Diwali Firecrackers

Diwali was more toxic than the last one as the maximum levels of several gases and particles went up. On Diwali, the PM2.5 levels were 5 times higher than the prescribed 60micrograms per cubic meter.

**Components:** Nitrogen oxide, PM2.5, carbon monoxide, sulphur dioxide

26%



#### Stubble & waste burning

By mid-October, farmers in Haryana and Punjab start burning their fields after harvest to get rid of the stubble remains. IIT Kanpur study shows that 26% of Delhi's PM2.5 levels in winters come from agriculture stubble and leaf burning in neighbouring states.

**Components:** Carbon dioxide, PM2.5, mercury

38%



#### Road dust

Delhi generates almost 4000 tonnes of debris everyday and the sole processing plant can only deal with 10% of it. IIT Kanpur study quoted construction and road dust to be the largest contributor of PM 10 and 2.5 levels.

**Components:** PM10, soot, sulphate, silicates, carbon monoxide, hydrocarbons

20%



#### Vehicular emission

Delhi has over 8.9 million registered vehicles. Additionally, up to 100,000 trucks enter the city after 10pm. Studies show that the city's average speed has gone down from 20km/hr to 5km/hr. Experts say lower speeds cause higher emissions.

**Components:** PM2.5, PM10, hydrocarbons, nitrogen oxides

5%



#### Thermal powerplants

A study conducted by NASA showed that SO2 emissions in India increased by over 60% from 2005 to 2012. Over half of it came from coal-fired power sector. A Green Peace study showed coal emissions enter Delhi from plants as far as 300kms away.

**Components:** Arsenic, lead, selenium

### Spot the difference

#### What is FOG?

- Fog is condensed water droplets in air.
- A natural environmental phenomenon.
- Usually classified as fog when visibility drops below 1km and humidity levels is more than 75%.
- Temperature should be low enough for condensation.
- Fog usually recorded in early mornings.
- Does not cause any illness.

#### What is smog?

- Smog is a mixture of fog, smoke, particulate matter.
- Man-made due to high pollution level.
- For a cloud causing low visibility to qualify as smog, there should be enough pollution, smoke and moisture in air.
- The haziness witnessed sometimes between 10am and 8pm is usually just smoke obstructing visibility.
- It is poisonous and may trigger asthmatic attacks and other breathing complications.

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