



## Ban on use of Coal in Delhi-NCR

**For Prelims:** Commission for Air Quality Management, greenhouse gas, Particulate Matter, Nitrogen Oxide, CO<sub>2</sub>, CO, Coal, natural gas

**For Mains:** Effects of Air pollution , Environmental Pollution & Degradation

### Why in News?

Recently, the [Commission for Air Quality Management \(CAQM\)](#) has issued directions to ban the use of coal in industrial, domestic and other miscellaneous applications in the entire Delhi-NCR region from 1<sup>st</sup> January 2023.

- This step is taken to **bring down [greenhouse gas emissions](#)** in Delhi NCR.
- Delhi is among the world's most polluted capital cities.
  - According to the [pollution index](#), on average, the AQI in the capital, its neighboring cities - Gurgaon, Noida, and Ghaziabad - is in the 300-400 level mark.

### What is the Significance of this Step?

- **Save Tonnes of Coal Annually:**
  - The Step to drive the switching over to cleaner fuel such as natural gas and biomass **will not only help save 1.7 million tonnes of coal annually**, but also reduce pollutants including [Particulate Matter \(PM\)](#), [Nitrogen Oxide \(NOx\)](#), [CO<sub>2</sub>](#) and **Carbon monoxide (CO)**.
    - However, [thermal power plants](#) in NCR are allowed to use **low-sulphur coal**.
- **Help in Tackling Air pollution:**
  - **Heavy pollution from coal is a significant contributor to the degrading quality of air** in the NCR and surrounding areas, and thus a need to switch to a cleaner fuel has been felt over time.
    - Every year, **air pollution from fossil fuels takes millions of lives, increases our risk of stroke**, lung cancer and asthma, and costs us a huge amount of money.
- **Natural Gas gets a Boost:**
  - The decision to ban use of coal as a fuel **will boost the prospects of natural gas in the NCR**.
    - As per the **Petroleum Planning & Analysis Cell**, the global per capita natural gas consumption is 496 cubic meters) compared to 43 cu m for India.

### What Steps have been taken to Combat Air Pollution so far?

- **Promoting Clean Fuels:**
  - CAQM has been focusing on **shifting industries to piped [natural gas](#) and other clean fuels**.
  - Around 1.7 million tonnes (MT) of coal is consumed annually by various industries in the

NCR, with about 1.4 MT alone being consumed in the six major industrial districts.

- **Supreme Court Order:**
  - In December 2021, the [Supreme Court](#) ordered the government to find a permanent solution to the air pollution menace occurring every year in Delhi and NCR.
  - Accordingly, the **CAQM formed an Expert Group** to deliberate upon all such suggestions and proposals.
  - The Expert Group has strongly recommended phasing out use of heavily polluting fossil fuels like coal and mandating cleaner fuels, to the extent possible.

## What are the Related Initiatives taken?

- [System of Air Quality and Weather Forecasting and Research \(SAFAR\) Portal](#)
- **Air Quality Index:** AQI has been developed for eight pollutants viz. PM2.5, PM10, Ammonia, Lead, nitrogen oxides, sulphur dioxide, ozone, and carbon monoxide.
- **Graded Response Action Plan**
- For Reducing Vehicular Pollution:
  - [BS-VI Vehicles](#),
  - [Push for Electric Vehicles \(EVs\)](#),
  - [Odd-Even Policy](#) as an emergency measure
- **New Commission for Air Quality Management**
- Subsidy to farmers for buying [Turbo Happy Seeder \(THS\) Machine](#)

## What are the Key Highlights about Coal?

- It is **one of the most abundantly found fossil fuels**. It is used as a domestic fuel, in industries such as iron and steel, steam engines and to generate electricity. Electricity from coal is called thermal power.
- The **coal which we are using today was formed millions of years ago** when giant ferns and swamps got buried under the layers of earth. Coal is therefore referred to as Buried Sunshine.
- The **leading coal producers of the world include** China, India, US, Indonesia, Australia.
- The **coal producing areas of India include** Raniganj, Jharia, Dhanbad and Bokaro in Jharkhand.
- **Coal is also classified into four ranks:** anthracite, bituminous, subbituminous, and lignite. The ranking depends on the types and amounts of carbon the coal contains and on the amount of heat energy the coal can produce.

## UPSC Civil Services Examination, Previous Year Question

**Q. Consider the following: (2010)**

1. Oxides of Hydrogen
2. Oxides of Nitrogen
3. Oxides of Sulphur

**Which of the above causes/cause acid rain?**

- (a) 1 and 2 only
- (b) 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

**Ans: (c)**

**Exp:**

- Acid rain, or acid deposition, is a broad term that includes any form of precipitation with acidic

components, such as Sulfuric or Nitric Acid that fall to the ground from the atmosphere in wet or dry forms. This can include rain, snow, fog, hail or even dust that is acidic.

- Acid rain results when Sulphur Dioxide ( $\text{SO}_2$ ) and Nitrogen Oxides (NOX) are emitted into the atmosphere and transported by wind and air currents.
- The  **$\text{SO}_2$  and NOX react with water, Oxygen and other chemicals to form Sulfuric and Nitric Acids.** These then mixes with water and other materials before falling to the ground. Hence, 2 and 3 are correct.
- **Oxide of Hydrogen, i.e.,  $\text{H}_2\text{O}$  does not cause acid rain** on its own. It is only when it combines with Oxides of Sulphur or Nitrogen the acid rain occurs. Hence, 1 is not correct. Therefore, aoption (c) is the correct answer.

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**Q. Consider the following: (2019)**

1. Carbon monoxide
2. Methane
3. Ozone
4. Sulphur dioxide

**Which of the above are released into atmosphere due to the burning of crop/biomass residue?**

- (a) 1 and 2 only  
(b) 2, 3 and 4 only  
(c) 1 and 4 only  
(d) 1, 2, 3 and 4

**Ans: (d)**

**Exp:**

- Biomass is organic material that comes from plants and animals, and it is a renewable source of energy. Biomass contains stored energy from the Sun. Plants absorb the Sun's energy in a process called photosynthesis. When biomass is burned, the chemical energy in biomass is released as heat.
- Crop residue and biomass burning (forest fires) is considered as a **major source of Carbon Dioxide ( $\text{CO}_2$ ), Carbon Monoxide (CO), Methane ( $\text{CH}_4$ ),** volatile organic compounds (VOC), and Nitrogen Oxides (NOX). Burning of rice crop residue releases Suspended Particulate Matter,  $\text{SO}_2$ ,  $\text{NO}_2$  and  $\text{O}_3$  in the atmosphere. Therefore, option (d) is the correct answer.

**Source: IE**