



India Observed 28th World Ozone Day

For Prelims: World Ozone Day, Montreal Protocol, India Cooling Action Plan (ICAP), Kigali Amendment, Ozone Depletion, Lifestyle for the Environment (LiFE), COP26, Make In India, Skills India Mission, Australia Forest Fires, Intergovernmental Panel on Climate Change (IPCC), United Nations Environmental Programme (UNEP).

For Mains: Effects of ozone layer depletion, Related Initiatives.

Why in News?

Recently, India observed 28th World Ozone Day.

- Every year, **16th September** is observed as the **International Day for the Preservation of the Ozone layer (World Ozone Day)** to commemorate the signing of the [Montreal Protocol](#).
 - The theme of World Ozone Day 2022 is “**Montreal Protocol@35: global cooperation protecting life on earth**”.

What were the Key Highlights of World Ozone Day?

- **The 23rd edition of “The Montreal Protocol: India’s Success Story”** was released.
- The other publications of the Ozone Cell of the Ministry of Environment, Forests and Climate Change released on the occasion include:
 - **Action Plan** for implementing the recommendations of the [India Cooling Action Plan \(ICAP\)](#) for the thematic area space cooling in buildings.
 - **iStudy Report** on Public Procurement Policies for **Refrigeration and Air-Conditioning (RAC) Equipment** using [non-Ozone Depleting Substance \(ODS\)](#) based refrigerants.
 - **Study Report on Cold Chain sector in India** for promoting **non-ODS and Low-Global Warming Potential (GWP) Refrigerants**.
 - Booklet on **Good Servicing Practices for Energy Efficient operation of Room Air conditioners**.
- The winning entries for a **national level poster making and slogan writing competition for school children on ‘Save Our Ozone Layer’** were announced.
- **Call for adoption for [Lifestyle for the Environment \(LiFE\)](#)** that’s in line with the concept of sustainable lifestyle, encouraging us to adopt mindful and not mindless consumption and utilization of resources.
- **Collaboration with eight Indian Institutes of Technology** (Bombay, Roorkee, Hyderabad, Kanpur, Guwahati, Banaras, Madras and Delhi) to promote research and development of chemicals with low global warming potential, including blends. These can be used as **alternatives to substances controlled under the Montreal Protocol**.
 - It will also help promote the [Make in India](#) initiative of the Government.

What is India Cooling Action Plan (ICAP)?

- **About:**

- The **Indian Cooling Action Plan (ICAP)** was launched in March 2019 by the **Ministry of Environment, Forests and Climate Change**.
- The ICAP provides a **20-year perspective and outlines actions** needed to provide access to sustainable cooling.
- The plan seeks to:
 - **Reduce cooling demand** across sectors by 20% to 25% by 2037-38
 - **Reduce refrigerant demand** by 25% to 30% by 2037-38
 - **Reduce cooling energy requirements** by 25% to 40% by 2037-38
 - **Recognise “cooling and related areas”** as a thrust area of research under National Science and Technology Programme
 - **Training and certification of 100,000 servicing sector technicians** by 2022-23, synergizing with [Skill India Mission](#).
- **Significance:**
 - Implementation of actions emerging from ICAP will supplement efforts in **adopting climate-friendly alternatives and promotion of energy efficiency** during the implementation of Hydrofluorocarbon (HFC) phase-out under the [Kigali Amendment](#).
 - This will significantly contribute to **India’s climate action in achieving the net zero emissions by 2070, through the ‘Panchamrits’**, committed by the Prime Minister of India, at the [26th Climate Change Conference of Parties \(CoP26\) in 2021](#).

What is Montreal Protocol?

- **The Montreal Protocol** is a worldwide **agreement to stop the production of substances causing ozone-depletion**.
- Adopted on 16 September 1987, the Protocol is to date the **only UN treaty ever that has been ratified by every country on Earth - all UN Member States**.
- It has led to the **phase-out of 99% of ozone-depleting chemicals** in refrigerators, air-conditioners and many other products.
- **India** is a party to the Montreal Protocol since **June 1992**.

What are India’s Achievements in Implementation of the Montreal Protocol?

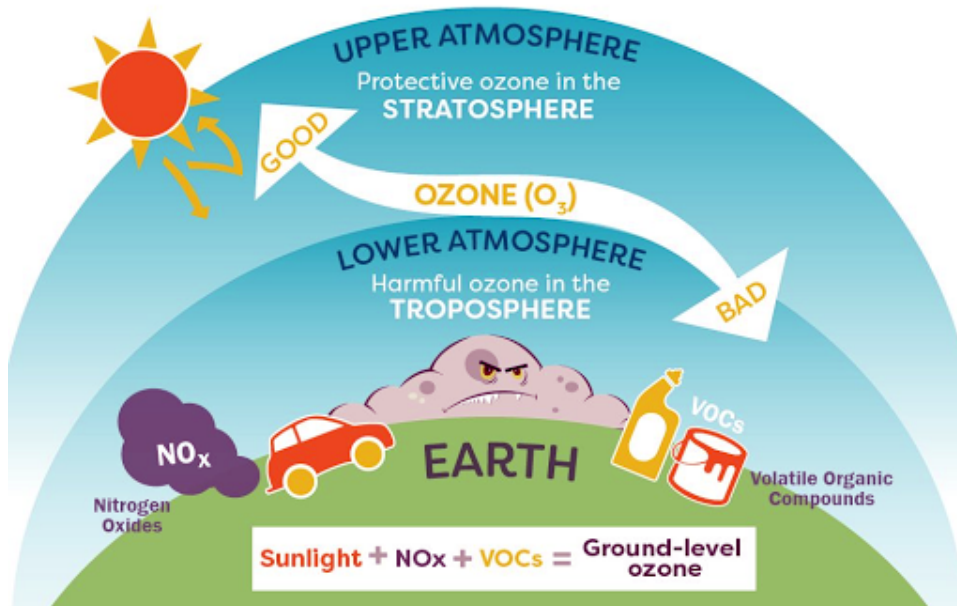
- India **phased out Chlorofluorocarbons (CFCs)**, Carbon tetrachloride, Halons, Methyl Bromide and Methyl Chloroform **for controlled uses** as on 1 January 2010, **in line with the Montreal Protocol schedule**.
- Currently, **Hydrochlorofluorocarbons (HCFCs) are being phased out** as per the accelerated schedule of the Montreal Protocol.
 - **Hydrochlorofluorocarbons Phase-out Management Plan (HPMP) Stage-I** has been successfully implemented from 2012 to 2016.
 - **HPMP Stage-II** is under implementation since 2017 and will be completed by 2023.
 - **HPMP Stage-III**, the last of the HPMPs to phase out remaining HCFCs, will be implemented from 2023 - 2030.
 - The **phase-out of HCFCs in all manufacturing sectors**, comprising refrigeration and air-conditioning manufacturing sectors, **will be completed by 1st January 2025 and the activities relating to the servicing sector will be continued till 2030**.

What is Ozone Layer?

- **Ozone is a special form of oxygen** with the chemical formula **O₃**. The oxygen we breathe and that is so vital to life on earth is O₂.
- About **90% of ozone occurs naturally** in the Earth's upper atmosphere (Stratosphere) **between 10 and 40km above Earth's surface**, where it forms a protective layer that **shields us from the sun's harmful ultraviolet rays**.
- This **“good” ozone is gradually being destroyed** by man-made chemicals referred to as **Ozone-Depleting Substances (ODS)**, including CFCs, HCFCs, halons, methyl bromide, carbon tetrachloride, and methyl chloroform.

- When **chlorine and bromine atoms come into contact with ozone** in the stratosphere, **they destroy ozone molecules**.
- One chlorine atom can destroy over 100,000 ozone molecules before it is removed from the stratosphere.
- Ozone can be destroyed more quickly than it is naturally created.
- **Ozone layer depletion leads to an uptick in the incidence of skin cancer and cataracts in humans.**

// GOOD OZONE & BAD OZONE ?



How Wildfires are Affecting the Ozone Layer?

- **Rising global temperatures and drier conditions** are leading to **frequent, massive wildfires** around the world, according to the UN [Intergovernmental Panel on Climate Change \(IPCC\)](#).
- The frequency of extreme wildfires will **likely rise by 30% by 2050**, according to the [United Nations Environment Programme \(UNEP\)](#).
 - Such events **could undo 35 years of efforts under the Montreal Protocol**.
- Wildfires could also trigger **a vicious cycle**. They have found that **depletion of the ozone layer strengthens the southern polar vortex**, a pocket of low pressure and cool air over the South Pole.
 - It **creates a feedback loop: the stronger the polar vortex, the more it depletes the surrounding ozone** and the longer it keeps the hole open.
- **Forest fires in Australia** continued from June 2019 to March 2020, and released over 1 million tonnes of smoke that reached to the stratosphere and affected the ozone layer by **triggering the widening of the Ozone Hole**.
 - They burned over 33 million hectares, killed or displaced 3 billion animals and caused damage to property, becoming the **worst natural disaster in the country**.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Q. Which one of the following is associated with the issue of control and phasing out of the use of ozone depleting substances? (2015)

- (a)** Bretton Woods Conference
- (b)** Montreal Protocol
- (c)** Kyoto Protocol
- (d)** Nagoya Protocol

Ans: (b)

Exp:

- The Bretton Woods Conference, officially known as the United Nations Monetary and Financial Conference was a gathering of delegates from 44 nations that met in 1944 in Bretton Woods (USA) to agree upon a series of new rules for the post-World War-II international monetary system.
 - The two major accomplishments of the conference were the creation of the International Monetary Fund (IMF) and the International Bank for Reconstruction and Development (IBRD).
- The Montreal Protocol is an international environmental agreement to protect the earth's ozone layer by eliminating the use of ozone depleting substances. Adopted on 15th September 1987, the protocol is to date the only UN treaty that ever has been ratified by every country on Earth – all 197 UN member states.
- The Kyoto Protocol is an international agreement linked to the UNFCCC, which commits its Parties by setting internationally binding GHGs (Greenhouse Gases) emission reduction targets.
 - The Kyoto Protocol was adopted in Kyoto, Japan on 11th December 1997 and entered into force on 16th February 2005.
 - The detailed rules for the implementation of the protocol were adopted as CoP7 in Marrakesh, Morocco in 2001 and referred as the Marrakesh Accord.
 - India has ratified the second commitment period (2008-2012) of the Kyoto protocol, that commits countries to contain emissions of greenhouse gases, reaffirming its stand on climate action.
- The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization provides a transparent legal framework for the effective implementation of one of the three objectives of the Convention on Biological Diversity: the fair and equitable sharing of benefits arising out of the utilization of genetic resources, to promote sustainable use of biological diversity. India signed the protocol in 2011.
- Therefore, option B is the correct answer.

Source: PIB

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