



World Likely to See 2°C Warming by 2050

Prelims: ANN, Climate Change, Global Warming, Paris Agreement.

Mains: Implications of Global warming.

Why in News?

Recently, a study published titled “**contradicted projections from the [Intergovernmental Panel on Climate Change \(IPCC\)](#)”.**

, states that the planet is **likely to warm up by two degrees Celsius by 2050**, even under a low-emission scenario.

- The researchers used **artificial intelligence** called **[Artificial Neural Networks \(ANN\)](#)** to predict the time for reaching the 1.5 °C and 2°C thresholds.
- The world has recorded a **1.1°C rise in temperature compared with the average in 1850-1900**.

What are the Key Findings?

- **Projection:**
 - There is a higher likelihood that 2°C will be reached under the low emission scenario compared with the **IPCC AR6 (Sixth Assessment Report) synthesis assessment**, and may **fail to uphold the [Paris Agreement](#)**.
 - The Paris Agreement aims to limit the rise to below 2°C while pursuing efforts to limit the increase to 1.5°C.
 - The IPCC estimated that the 1.5°C threshold could be attained as early as the 2030s under all emission scenarios.
 - Global warming is already on the verge of crossing the 1.5°C threshold, even if the **climate forcing pathway is substantially reduced** in the near term.
 - The threshold of 1.5°C will reach somewhere between 2033 and 2035 in the **high, intermediate and low forcing scenarios**.
 - The **world could touch 2°C by 2050 under the high-emission scenario**, 2049 and 2054 in the intermediate and low-emission scenarios, respectively.
 - In contrast, the IPCC estimated the likelihood of touching 2°C of global warming during the **mid-21st century is high under a high-emission scenario**.
- **Significance of Limiting Warming:**
 - Limiting warming to 1.5°C will **reduce the number of people frequently exposed to extreme [heat waves](#)** by about 420 million.
 - It can also **reduce the probability of [drought](#) and risks related to water availability**.
- **Implications:**
 - Warming above the threshold of 1.5°C can cause a **broad range of climate risks** — such as impacts on human health, economic growth, crop yields, coastal and small island communities, terrestrial and marine ecosystems, as well as the **frequency, intensity and cost of [extreme climate events](#)**.

What are Artificial Neural Networks?

- ANN is a vital **subset of machine learning** that helps computer scientists in their work on complex tasks, such as, strategizing, making predictions, and recognizing trends.
- It is a **computational model that mimics the way nerve cells work in the human brain**. It is designed to simulate the way the human brain analyzes and processes information.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims

Q. With reference to the Agreement at the UNFCCC Meeting in Paris in 2015, which of the following statements is/are correct? (2016)

1. The Agreement was signed by all the member countries of the UN and it will go into effect in 2017.
2. The Agreement aims to limit the greenhouse gas emissions so that the rise in average global temperature by the end of this century does not exceed 2°C or even 1.5°C above pre-industrial levels.
3. Developed countries acknowledged their historical responsibility in global warming and committed to donate \$ 1000 billion a year from 2020 to help developing countries to cope with climate change.

Select the correct answer using the code given below:

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

Ans: (b)

Mains

Q1. Assess the impact of global warming on the coral life system with examples. **(2017)**

Q2. 'Climate change' is a global problem. How India will be affected by climate change? How Himalayan and coastal states of India will be affected by climate change? **(2017)**

Q3. Discuss global warming and mention its effects on the global climate. Explain the control measures to bring down the level of greenhouse gases which cause global warming, in the light of the Kyoto Protocol, 1997. **(2022)**

Source: DTE