



# World Energy Outlook Report 2021: IEA

## Why in News

Recently, the [International Energy Agency \(IEA\)](#) released the [World Energy Outlook \(WEO\) Report 2021](#).

- **Published every year**, the WEO provides critical analysis and insights on trends in energy demand and supply.
- The 2021 report signaled pressure on governments **to push for greater climate action at the [Conference of Parties \(COP26\) summit](#)** (in Glasgow, UK).
- Earlier, IEA also released its [Net Zero Emissions \(NZE\) Roadmap](#) - named '[Net Zero by 2050](#)'.

## Key Points

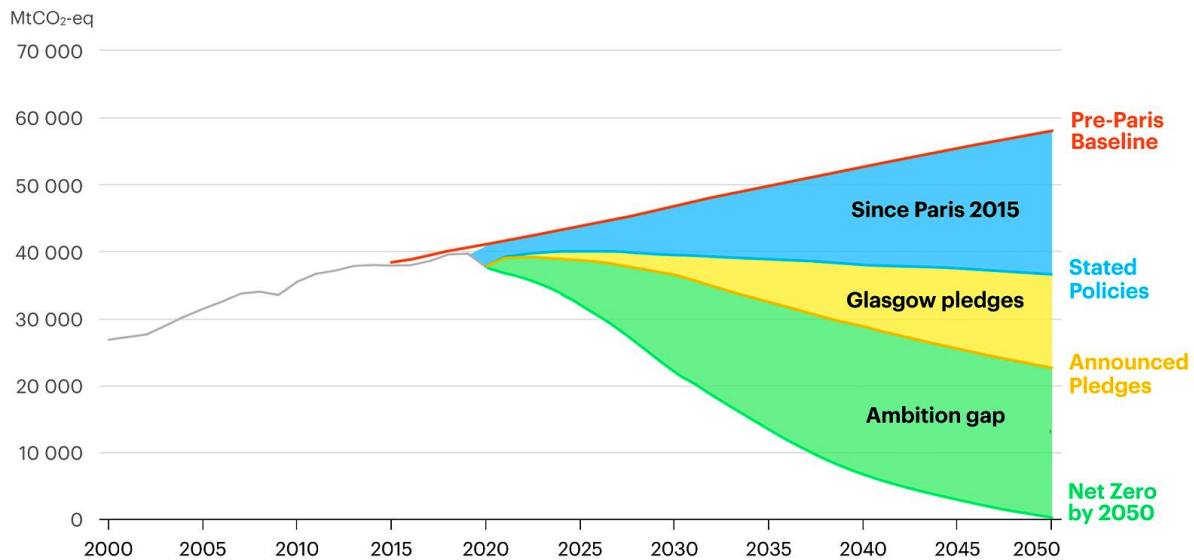
- **Increase Share of Renewables:**
  - **Renewable energy sources**, such as solar, wind, hydropower and bioenergy, need to **form a far bigger share** in the rebound in energy investment after the coronavirus pandemic.
    - World is **not investing enough to meet future energy needs**, and the uncertainties are setting the stage for a volatile period ahead.
  - Demand for renewables continues to grow. However, this **clean energy progress is still far too slow to put global emissions into sustained decline towards net zero by 2050**, which the IEA believes will help limit the increase in global temperatures to 1.5 degrees Celsius.
  - **Initially IEA supported continued investment in fossil fuels**. However it has gradually **moved toward a “more distinct tone** urging decision makers to mitigate [climate change](#)”.
- **Emission Reduction Measures:**
  - The extra investment might not be as difficult as it sounds. **More than 40% of the required emissions reductions would come from measures that pay for themselves**, such as:
    - Improving efficiency, limiting gas leakage, or installing wind or solar in places where they are now the most competitive electricity generation technologies.
- **Different Scenarios:** The IEA analyzed two possible scenarios:
  - **Stated Policies Scenario (STEPS):**
    - This looks at the **measures and policies that governments have already put in place**. Despite the measures, annual worldwide emissions would still be the same as developing countries build up their infrastructure.
    - Under this scenario, **temperatures in the year 2100 would be 2.6 C higher** than pre industrial levels.
  - **Pledge for Net Zero:**

- This looks at **governments' pledges to achieve net-zero emissions**, potentially doubling clean energy investment over the next decade.
- If countries manage to implement these pledges in time, the global average **temperature increase would be around 2.1 C by the year 2100** — an improvement, but still well above the 1.5 Celsius agreed under the [Paris accord](#).

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## Global CO<sub>2</sub> emissions by scenarios, 2000-2050

World Energy Outlook 2021



### Major Suggestions:

- **Clean Electrification:**
  - This requires a doubling of solar PV and wind deployment relative to the [announced pledges scenarios].
- **Low-Emission Generation:**
  - A major **expansion of other low-emissions generation**, including the use of nuclear power where acceptable; a huge build-out of electricity infrastructure and all forms of system flexibility, including from hydropower; a rapid phase-out of coal; and a drive to expand electricity use for transport and heating.
- **Energy Efficiency:**
  - A relentless **focus on energy efficiency**, together with measures to temper energy service demand through materials efficiency and behavioral change.
- **Reduction in Methane Emissions:**
  - A drive to **cut methane emissions from fossil fuel operations** and a big **boost to clean energy** innovation.
- **Decade of Clean Energy:**
  - Making the 2020s the decade of massive clean energy deployment **will require unambiguous direction from COP26**.

## India Specific Findings

- **Population and Gross Domestic Product (GDP) 2020-2050:**

- India will become the **most populous nation** surpassing China's population this decade, and by 2050 India crosses 1.6 billion in population whereas China's population is projected to decrease.
- India's **GDP** will be growing faster than China on average over the next three decades [5.3% vs China's 3.6%].

#### ▪ **Coal Production:**

- In India, over 50 GW of **Financially Stressed Coal Assets (NPA)** has created strains in the banking system.
- Coal demand in India is **expected to grow by around 30% by 2030**.
- As per their announced pledges, after China, **India is projected to be the next largest user of unabated coal**, responsible for about 15% of global use for electricity generation in 2030.

#### ▪ **Air Pollution:**

- A failure to accelerate clean energy transitions would continue to leave people exposed to air pollution globally.
- Recently 1.67 million premature deaths in India were linked to air pollution, that's more than three deaths every minute.

#### ▪ **Appreciated India's Efforts:**

- Notable examples of developing economies mobilising capital for clean energy projects, such as **India's success in financing a rapid expansion of solar photovoltaics (pv) in pursuit of its 450 GW** target for renewables by 2030.
- Recent survey data from the **World Health Organization** for India revised the historic clean cooking access rates.
  - This is due to faster progress than previously assumed, in large part due to the **Pradhan Mantri Ujjwala Yojana** LPG distribution scheme.

#### ▪ **Recommendation:**

- Calls for India **to mandate a default set point temperature of 24 degrees Celsius for all room air conditioners and tighter minimum performance standards** with the aim to improve efficiencies as the demand for cooling and power increases.

## Way Forward

- The **world is facing a formidable task of transforming the energy sector within 30 years** in a cost-effective manner, even as the world economy more than doubles in size and the global population increases by 2 billion people.
- The need for the world to reach Net Zero Emissions by 2050 lies in the major interim steps that need to be taken through 2030 — to engineer **cheap and green energy from hydrogen and renewable energy while** making them accessible to all.

**Source: IE**