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World Energy Outlook Report 2021: IEA

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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):**

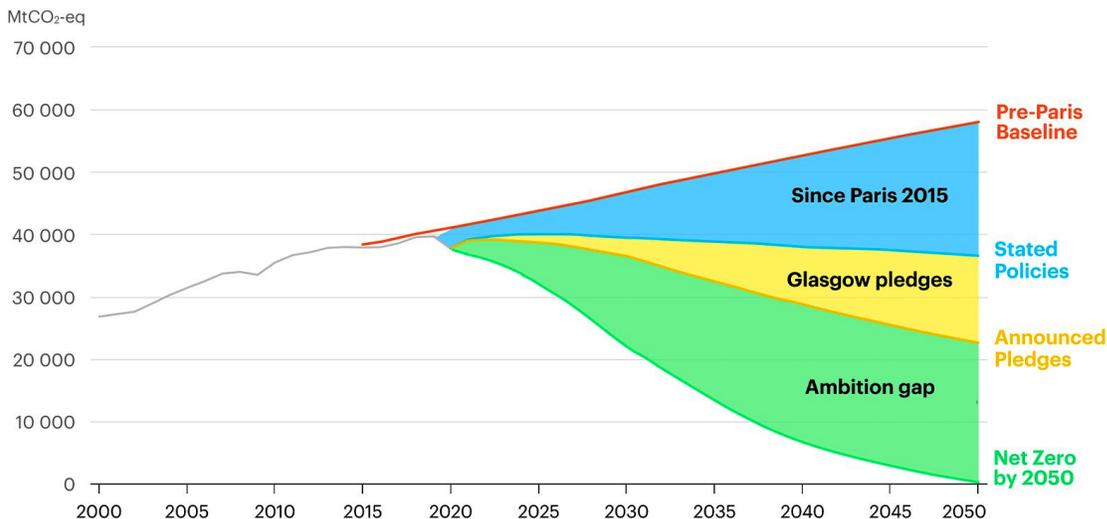
- This looks at the **measures and policies that governments have already put in place**. Despite the measures, annual worldwide emissions would still be the same as developing countries build up their infrastructure.
- Under this scenario, **temperatures in the year 2100 would be 2.6 C higher** than 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**.

Global CO₂ 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 (NPAs)** 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