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Global Energy & Carbon Dioxide Emissions

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Recently the **International Energy Agency (IEA)** has released its **second Global Energy and CO₂ Status Report** which provides a snapshot of global trends and developments across fuels, renewable sources, and energy efficiency and carbon emissions, in 2018.

- This is for the **first time** that the IEA assessed the **impact of fossil fuel use on global temperature increases**.
 - It found that CO₂ emitted from coal combustion was responsible for over 0.3°C of the 1°C increase in global average annual surface temperatures above pre-industrial levels.
 - This makes **coal the single largest source of global temperature increase**.
- The **first edition** of this report was **released in 2017**.

Global Findings

- Global energy consumption in 2018 **increased at nearly twice the average rate of growth since 2010**, driven by a **robust global economy (expanded by 3.7% in 2018)** and **higher heating and cooling needs** in some parts of the world.
 - **China, the United States, and India** together accounted for **nearly 70% of the rise in energy demand**. These countries also accounted for **85% of the net increase in emissions**.
 - **Emissions declined** for Germany, Japan, Mexico, France and the United Kingdom.
 - **Weather conditions in 2018** were also responsible for increase in global energy demand as average winter and summer temperatures in **some regions approached or exceeded historical records**.

- The **CO₂ emissions stagnated between 2014 and 2016**, even as the global economy continued to expand.
 - This decoupling was primarily the result of strong energy efficiency improvements and low-carbon technology deployment, leading to a decline in coal demand.
 - But the dynamics changed in 2017 and 2018. Higher **economic growth was not met by higher energy productivity**, lower-carbon options did not scale fast enough to meet the rise in demand.
- The **natural gas which emerged as the fuel of choice for the year 2018**, accounting for nearly 45% of the increase in total energy demand.
 - Demand for all fuels rose, with fossil fuels meeting nearly 70% of the growth for the second year running.
 - Renewables grew at double-digit pace, but still not fast enough to meet the increase in demand for electricity around the world.
 - Nuclear also grew by 3.3% in 2018, mainly as a result of new capacity in China and the restart of reactors in Japan. Worldwide, nuclear generation met 7% of the increase in energy demand.

India Specific Findings

- India's **energy demand outpaced global demand growth in 2018**.
- India emitted 2,299 million tonnes of carbon dioxide in 2018, a 4.8% rise from 2018 **led by coal (power generation) and oil (transport), the two biggest contributors to pollution**.
 - Although the **nation's per capita release remained low at 40% of the global average**.
 - India's emissions growth in 2018 was higher than that of the United States and China – the two biggest emitters in the world – and this was **primarily due to a rise in coal consumption**.
- India's energy intensity improvement declined 3% from 2018 even as its renewable energy installations increased 10.6% from 2018.
 - It can be noted that as per its commitments to the **United Nations Framework Convention on Climate Change**, India has promised to reduce the **emissions intensity of its economy by 2030, compared to 2005 levels**.
 - It has also **committed to having 40% of its energy from renewable sources by 2030** and, as part of this, install 100 GW of solar power by 2022.
- These findings raise **questions about the effectiveness of the global fight against climate change** amid rising energy demand.