Fighting Climate Change

What is the issue?

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- NASA aims to send humans to Mars in the 2030s and its fitness for hosting human colonies is being assessed.
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- This is an exciting quest but somewhere in this endeavour lies the recognition that we may be pushing the earth to a point where an additional home may be required.
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What is happening at the moment?

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- The Intergovernmental Panel on Climate Change, which tracks and predicts the effects of climate change, reports that extreme weather is increasing the frequency and strength of heat waves, droughts, floods, and wildfires, impacting species and plant life.
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- Data from the IMD reveals that **2016 was the warmest year for India since weather data began to be recorded in 1901.**
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- The data also reveals that India’s top five warmest years since 1901 have been recorded only in the last 15 years.
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- While India’s per capita emissions are among the lowest in the world, in absolute terms India is the third largest emitter of greenhouse gases (GHG) in the world behind China and the US.
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- More importantly, between 2000 and 2012 India’s emissions grew at an average of 5%, compared to a global average of 2%.
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What could be done?

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- McKinsey has famously noted that much of **the technology needed to curb climate change already exists.**
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- It is most evident in areas like renewable energy, where rapid improvements in technology are bringing down the costs of solar and wind power significantly.
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- Unfortunately, **most cost-effective technologies have not yet been fully exploited.**
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- It is important to develop a **global carbon pricing system** to ensure that climate protection is introduced in a systematic and cost-efficient way.
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- What is needed now is leadership in action. Demonstration and replication of systems that operate in low-carbon, resource-smart ways. A key place to start is cities.
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- **Buildings:** As buildings consume an estimated third of global final energy and create a fifth of all GHG emissions, it is imperative that **superior insulation solutions** and building material along with **efficient building designs,** be deployed to help reduce energy requirements significantly.
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- **Cement:** More can also be done to decrease the energy and carbon-intensity of the building process. Ex. The cement industry is responsible for approximately 5% of human-induced CO2 emissions globally.
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- Specialty construction chemicals today allow incorporation of high levels of recycled materials such as **fly ash and slag in concrete** (lowers CO2 emissions)**,** thus lowering cement content.
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- **Transportation:** It is responsible for an estimated 14% of GHG emissions.
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- **Lightweight engineering plastics** help reduce the weight of vehicles and thereby increase fuel efficiency. **Emission control catalysts** break down hazardous exhaust fumes, hence reducing air pollution.
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- Electric vehicles reduce dependence on gasoline. Supportive policies to speed the deployment of such technologies would benefit the environment enormously.

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- **Industries:** An estimated 21% of global greenhouse gas emissions are attributable to manufacturing primarily from burning of fossil fuels.
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- Novel processes in integrated production facilities allow the waste heat of one plant’s production process to be used as energy in an adjacent plant, thus avoiding both costs and emissions.
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- It is important that policymakers, academia, research institutions, industry and environmental groups step up their cooperation to lead the world to a low-carbon economy through research and innovation.
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Source: The Indian Express

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