



India- US: Technology-based Energy Solutions

For Prelims: Net Zero, Climate change and Impacts, Clean Energy, United States-India Science & Technology Endowment Fund, Various partnerships on climate change.

For Mains: India-US cooperation, Tackling climate and clean energy challenges, Efforts to promote clean energy

Why in News

Recently, India and the US launched a programme titled '**Technology-based Energy Solutions: Innovations for [Net Zero](#)**' to tackle **climate and clean energy challenges**.

- It constitutes a **call for Ignition Grants** by the **United States-India Science & Technology Endowment Fund (USISTEF)**.

United States-India Science & Technology Endowment Fund

- The governments of the US (through the Department of State) and India (through the [Department of Science & Technology](#)) have established the **US-India Science & Technology Endowment Fund (USISTEF)**.
- It has been established **for the promotion of joint activities that would lead to innovation and entrepreneurship** through the application of science and technology.
- The aim of the Fund is **to support and foster joint applied R&D to generate public good through the commercialization of technology** developed through sustained partnerships between U.S. and Indian researchers and entrepreneurs.
- The U.S.-India Science and Technology Endowment Fund activities are implemented and administered through the bi-national [Indo-U.S. Science and Technology Forum \(IUSSTF\)](#).

Key Points

- **About:**
 - It is a programme to support **India-US S&T (Science and Technology)-based entrepreneurial initiatives** that address the development and implementation of next-generation **clean and [renewable energy](#), energy storage, and [carbon sequestration](#)**.
 - The new program aligns with the **goals of the [U.S.-India Strategic Clean Energy Partnership](#)** (SCEP) and will be administered by the bi-national Indo-U.S. Science and Technology Forum (IUSSTF).
 - The SCEP was launched in accordance with the **US - India Climate and Clean Energy Agenda 2030 Partnership** announced by both countries at the [Leaders' Summit on Climate](#) held earlier this year (2021).
 - The IUSSTF is a bilateral organisation under the **Department of Science and**

Technology (DST), Government of India, and U.S. Department of State.

- It will **identify and support 'technology showstoppers'** or promising joint India-US S&T-based entrepreneurial initiatives in this area.
- Climate Change is **one of the biggest challenges facing our world today**, spurring the call for global collaborations to tackle this crisis.
- **Recent Developments in US-India Relations:**
 - **Malabar Exercise:** The Navies of the **Quad (Quadrilateral Framework) Nations** (India, the United States, Japan, and Australia) participated in the 25th edition of the exercise.
 - **India-US Agreement on ALUAV:** India and the US have signed a Project Agreement (PA) to jointly develop an **Air-launched Unmanned Aerial Vehicle (ALUAV)** or **drones** that can be launched from an aircraft.
 - **Issues in Free Trade Agreement:** The US administration has indicated that it is no longer interested in securing a bilateral **Free Trade Agreement (FTA)** with India.
 - **NISAR:** **NASA** and **ISRO** are collaborating on developing an **SUV (Sport Utility Vehicle)-sized satellite called NISAR**, which will detect movements of the planet's surface as small as 0.4 inches over areas about half the size of a tennis court.
- **Partnership on Climate Change with Other Nations:**
 - **US-India Strategic Clean Energy Partnership.**
 - **India-European Union:** **Paris Agreement**, **Coalition for Disaster Resilient Infrastructure**, **Conference of the Parties (COP 26)**.
 - **Glasgow Leaders' Declaration on Forests and Land Use.**
 - **Kunming Declaration on Biodiversity.**

Climate Change

- The term 'climate change' refers to **change in the longer term pattern of behaviour of the atmosphere** over millennia or, more recently, as a result of natural processes or human activity.
 - Climate is **distinguished from weather, which is the specific behaviour of the climate at a particular time.** Weather is made up of specific events, for example, a particular storm, the rainfall over a particular period, the temperature at a particular time.
- There are, however, many possible ways by which climate may be described. These are generally associated **with averages or variability in temperature, precipitation, wind and cloud.**
- The climate varies spatially, for example, depending on the distance from the equator or the sea, and temporally, for example, depending on seasonal and daily variations.

Some Indian Initiatives to Fight Climate Change

- **National Clean Air Programme (NCAP)**
- **Bharat Stage-VI (BS-VI) emission norms**
- **UJALA scheme**
- **National Action Plan on Climate Change (NAPCC)**

Way Forward

- We have to **grow the innovation pipeline at an unprecedented pace** and invest heavily to reduce green premiums on critical clean technologies and attract entrepreneurial talent to create new markets and industries to transition to Net Zero.
- Focus should be on the **global initiatives and transformative strategies needed to advance rapidly scalable clean energy solutions**, such as **smarter energy use, renewable technologies, and the electrification of transportation and buildings.**
- There is an **urgent need** for every country, city, business and financial institution **to adopt concrete plans for transitioning to net-zero.**
- Even more **urgent is for governments to match this long-term ambition with concrete actions now**, as trillions of dollars are mobilised to overcome the **Covid-19 pandemic.** Revitalising economies is our chance to re-engineer our future.

[Source: PIB](#)

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