

NEWS TODAY

GRAVITATIONAL WAVE BACKGROUND OF THE UNIVERSE DETECTED FOR THE 1ST TIME

● **Gravitational waves (GW)** are ripples in the fabric of spacetime caused by the most energetic events in the cosmos, such as **black hole mergers and neutron star collisions**.

➤ Their presence was **first given by Einstein in his Theory of Relativity**.

➤ They were **first detected in 2015, and till now they were detected in shortest-range wavelengths only**.

● **As gravitational waves** squeeze and stretch everything they pass through. To find evidence of this squeezing and stretching, astronomers observed pulsars.

➤ **Pulsars are rapidly rotating stars that blast out pulses of radiation** at extremely precise intervals, practically acting like cosmic lighthouses (used as a precise clock).

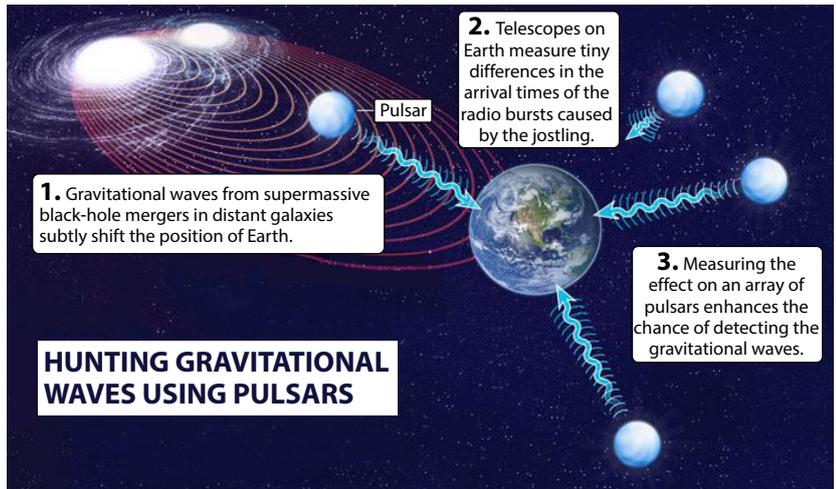
● Now, scientists have discovered a '**background hum**' rumbling throughout the universe.

➤ It confirms the **presence of low-frequency (long-wavelengths) gravitational waves**, thought to be constantly rolling through space noise.

➤ It is also significant in studying the **nature of gravity**.

➤ **India's Giant Metrewave Radio Telescope (GMRT, Pune)** was among the world's six large telescopes that played a vital role in providing evidence.

▪ Other 5 are located in **Germany, UK, France, Italy and Netherlands**.



GUIDELINES FOR IMPLEMENTING THE STRATEGIC INTERVENTIONS FOR GREEN HYDROGEN TRANSITION (SIGHT) PROGRAMME

● SIGHT is a sub-component of the **National Green Hydrogen Mission**.

➤ SIGHT aims to **establish electrolyser manufacturing base** (Component I) and **green hydrogen producing facilities** (Component II).

➤ Hydrogen is a **clean-burning fuel with water as its by-product, produced with the help of an electrolyzer**.

▪ Electrolysis is the process of using electricity to **split water into hydrogen and oxygen**.

▪ In general, the **PEM (proton exchange membrane)** is used for electrolysis.

➤ They have been launched with the aim of **enabling rapid scale-up, technology development and cost reduction**.

➤ Total financial incentive is ₹17,490 crore.

➤ **State-run Solar Energy Corporation of India (SECI)** is the implementing agency.

● **National Green Hydrogen Mission** was launched in 2022, as part of India's decarbonization strategy.

➤ Its other components are **Strategic Hydrogen Innovation Partnership (SHIP)** which **promotes Public-Private Partnership framework for Research & Development**.

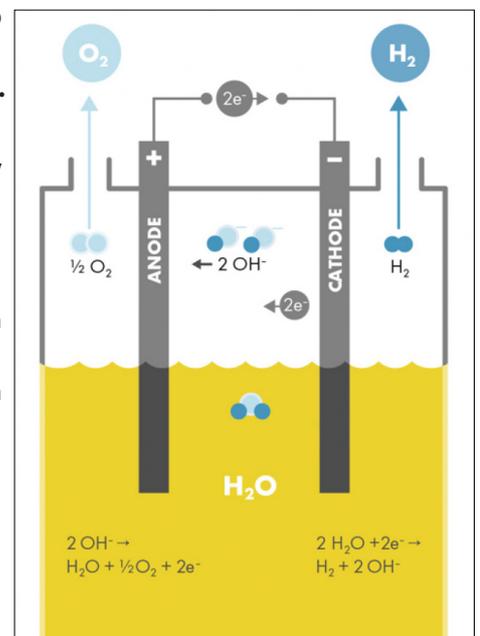
➤ **It seeks to:**

▪ Production of **5 million tonnes of green hydrogen by 2030**.

▪ Make India a **leading producer and supplier of Green Hydrogen in the world**.

▪ Creating **opportunities for employment and economic development**.

▪ **Supporting R&D projects in India** for further development of Green Hydrogen.



INDIA AND THE US-CHINA CHIPS WAR

- The US had imposed export restrictions on American chipmaking tools to China, citing national security concerns.
 - **India has positioned** itself as a player in the **critical semiconductor technology** field with US's Micron during the recent PM's visit.
 - **Earlier, in 2022, India- US initiative on Critical and Emerging Technologies (iCET)** deal was also signed.
- Semiconductors are materials with **conductivity between conductors and insulators**, that control the flow of electric current in electronic devices.
 - A **semiconductor chip is a network of semiconductors**, also called integrated circuits or microchips.
- **Semiconductors or Chips as the 'new oil'**
 - Taiwan produces over **60% of the world's** semiconductors and over 90% of the most advanced ones.
 - **USA approach: Semiconductor friendshoring** in the **Quad**, to building "resilient, diverse and secure supply chains of critical and emerging technologies".
 - US-led "**Chip 4 Alliance**" with Japan, South Korea and Taiwan to restrict Chinese access to chip tech.
- **India's chip initiatives**
 - **India Semiconductor Mission (ISM)** launched in 2021 and has been setup as an Independent Business Division within Digital India Corporation.
 - **Production-linked incentive (PLI) scheme** for the semiconductor industry.

INDIA-PHILIPPINES PARTNERSHIP AND SOUTH CHINA SEA

- **India and Philippines** during **5th** meeting of the **Joint Commission on Bilateral Cooperation (JCBC)** decided to expand their defence partnership.
 - **Defence has emerged as a key pillar of Indo-Philippines** partnership amid China's territorial claims along the **South China Sea region**.
 - India has asked the stakeholders to **abide by South China Sea (SCS)** ruling of Permanent Court of Arbitration in 2016 and respect the United Nations Convention on Laws of the Sea.
 - The ruling **refuted China's expansive claims in its dispute with the southeast Asian countries** over SCS waters.
- **South China Sea dispute:**
 - China stakes claim to **90% of the South China Sea**, and this claim is based on the U-shaped **nine-dash line**.
 - **Territorial disputes:** Brunei, Malaysia, the Philippines, Taiwan and Vietnam contest China's claim to South China Sea.
- **India interest in the SCS:** Commercial linkages with region, freedom of navigation, and a rules-based regional order.

➤ **UNCLOS** was adopted in **1982** and came into force in 1994.

➤ It lays down a **comprehensive regime of law and order** in the world's oceans and seas establishing rules governing all uses of the oceans and their resources.



GUIDELINES FOR RESOURCE ADEQUACY PLANNING FRAMEWORK FOR INDIA

- The guidelines, is framed by **Ministry of Power** under the **Rule 16 of the Electricity (Amendment) Rules, 2022**.
 - The guidelines have **made it a statutory obligation for the DISCOM to ensure procurement of sufficient capacity to meet demand in their area**.
- **Key Highlights**
 - All discoms shall undertake a **resource adequacy plan (RAP) for a 10-year horizon**, known as **long-term Distribution Licensee Resource Adequacy Plan**.
 - DISCOMs should **have 75% long-term contracts**, 10-20% medium-term contracts, and the rest short-term contracts for **future power supply**.
 - Discoms **resource adequacy plan** would **provide the quantum** and type of generation resources.
 - **National Load Dispatch Centre (NLDC)** will also carry out bids to meet the **short-term resource adequacy plans**.
 - Plans shall also factor in the RPO (**Renewable Purchase Obligations contracts**) mandated for the obligated entities to promote RE capacity addition.
- **Other Measures for DISCOMs**
 - **Revamped Distribution Sector Scheme** aims to reduce AT&C losses to pan-India levels of 12-15%.
 - **Mandatory energy accounting** and energy auditing for all DISCOMs.
 - **UDAY (Ujwal DISCOM Assurance Yojana)** for Financial Turnaround of DISCOMs.

Issues faced by DISCOMs: Uncertain fuel (Coal) supply, insufficient and irregular revenue stream, high **AT&C losses**, unsustainable levels of overdue and debt etc.

SUSTAINABLE DEVELOPMENT GOALS (SDGs) NATIONAL INDICATOR FRAMEWORK (NIF) PROGRESS REPORT 2023 RELEASED

- **Ministry of Statistics and Programme Implementation (MoSPI)** prepares it to track the progress achieved so far at national level in respect of 17 SDGs.
 - **United Nations General Assembly in 2015** adopted SDG's.
 - In order to **monitor the implementation** of different SDG's, **Inter-agency and Expert Group on SDG Indicators (IAEG-SDGs)** developed the **Global Indicator Framework (GIF)**.
 - IAEG-SDGs was **set up by the United Nations Statistical Commission (UNSC)**.
 - GIF indicators have specific methodologies and data sources.
 - At present, the GIF includes 248 indicators, with 231 unique indicators.
 - In India, **similar to GIF, NIF was developed in 2018** that was aligned with the SDG global indicators.
 - At present, there are 284 indicators in the NIF.
- In 2019, the Ministry has developed and circulated Guidelines to the States/UTs for development of **State Indicator Framework (SIF)** in respective States/UTs.

● Key Findings

Sustainable Development Goals	Progress
SDG 3 Good Health and Well-Being	Maternal Mortality Ratio (97 in 2018-19)
SDG 4 Quality Education	Progress in Higher Secondary Education, Gross Enrolment Ratio (57.60, 2021-22)
SDG 13 Climate Action	India achieved a reduction in emission intensity of GDP over the 2005 level (24% reduction)

ALSO IN NEWS

 <p>Kangaroo Courts</p>	<ul style="list-style-type: none"> ● It is an unofficial court held by a group of people in order to try someone regarded, especially without good evidence, as guilty of a crime or misdemeanour.
 <p>Panchayat Development Index (PDI)</p>	<ul style="list-style-type: none"> ● It is released by the Union Ministry of Panchayati Raj. <ul style="list-style-type: none"> ➤ It provides a matrix to monitor and evaluate the progress of panchayats through the scores achieved by them. ➤ It ranks panchayats on the basis of scores, and categorize them into four grades. ➤ Grades include A (75 to 90%), B (60-75%), C (40-60%) and D (under 40%).
 <p>Open Market Sale Scheme (OMSS)</p>	<ul style="list-style-type: none"> ● OMSS is a mechanism implemented by the Food Corporation of India (FCI) to sell surplus food grains, primarily wheat and rice, from the central pool in the open market. <ul style="list-style-type: none"> ➤ Through periodic e-auctions, the FCI offers these food grains to open market bidders, retail chains etc, at pre-determined prices. ● Significance: to improve and regulate domestic supply, a measure to curb food grain inflation etc.
 <p>Indian Skimmer</p>	<ul style="list-style-type: none"> ● Four Indian Skimmer hatchlings, born on a sand patch in a barrage in Uttar Pradesh's Bijnor, have been washed away. ● Characteristics: <ul style="list-style-type: none"> ➤ Indian Skimmer normally nests around April and May. ➤ It feeds on surface-dwelling fish, small crustaceans and insect larvae. ● Distribution: <ul style="list-style-type: none"> ➤ It resides primarily on larger, sandy, lowland rivers, around lakes and adjacent marshes and ➤ In the non-breeding season, in estuaries and coasts ● IUCN Conservation Status: Endangered ● Major Threats: Exploitation and degradation of rivers and lakes, Predation by corvids like House crows and presence of stray and domestic dogs.

 <p>REITs & InvITs</p>	<ul style="list-style-type: none"> ● SEBI has approved the proposal whereby sponsors of REITs and InvITs would be required to hold a certain minimum stake in the investment vehicles. ● Currently, there is a 15 % unit holding lock-in for at least three years. <ul style="list-style-type: none"> ➤ Under the amendment, it starts at 15 % for 3 years, then reduces over time with the lower of 1% of unit capital or ₹1,000 crore after 20 years. ● REITs and InvITs are investment trusts that pool money from investors and invest in completed real estate and infrastructure assets respectively.
 <p>E logs(Ease of Logistics Services) platform</p>	<ul style="list-style-type: none"> ● Department for Promotion of Industry and Internal Trade asked Industry associations to participate on the e-logs platform. <ul style="list-style-type: none"> ➤ The platform has been started under the National logistics policy (2022). ● Main objectives of NLP <ul style="list-style-type: none"> ➤ To lower the logistics cost in India from its estimated 14% of GDP to around 8 % by 2030. ➤ To make Indian goods more competitive, promote economic growth and job opportunities in the sector.
 <p>Short-lived halogens (SLH)</p>	<ul style="list-style-type: none"> ● As per a recent study, oceans cool the planet by releasing short-lived halogens that contribute 8-10 per cent of cooling. ● SLH (lifetime of less than six months) are gases that contain the halogen elements chlorine, bromine, or iodine. <ul style="list-style-type: none"> ➤ Source: marine phytoplankton and algae, as well as abiotic sources from ocean and tropospheric chemistry. ➤ Impact: SLH from oceans reduces warming by depleting ozone and <i>reduce</i> the formation of cooling aerosols. ➤ SLH increase methane's lifetime in the atmosphere and increase the levels of water vapour.
 <p>Aspartame</p>	<ul style="list-style-type: none"> ● Aspartame, a sweetener used in aerated drinks, is set to be declared carcinogenic by WHO. <ul style="list-style-type: none"> ➤ These are also known as non-nutritive sweeteners or 'sugar substitutes'. ● Aspartame is a methyl ester of a dipeptide consisting of two amino acids, aspartic acid, and phenylalanine <ul style="list-style-type: none"> ➤ The perceived sweetness of aspartame in humans is due to its binding of the heterodimer G protein-coupled (cell surface receptors that mediate physiological responses).
 <p>Personality in News</p>	<ul style="list-style-type: none"> ● Prasanta Chandra Mahalanobis <ul style="list-style-type: none"> ➤ National Statistics Day (June 29) is celebrated every year in recognition of contributions made by Prasanta Chandra Mahalanobis in the fields of statistics and economic planning. ● Contribution and Achievements <ul style="list-style-type: none"> ➤ He is often referred to as the father of Indian statistics. ➤ He was one of the members of the first Planning Commission of India and founded the Indian Statistical Institute (ISI). ➤ He found Mahalanobis distance, a statistical measure used to find the distance between a point and a distribution. ● Values: Perseverance, self-Reliance etc.
 <p>Places in news</p>	<p>Tanzania (Capital: Dodoma)</p> <ul style="list-style-type: none"> ● Political Boundaries <ul style="list-style-type: none"> ➤ It is bounded by Uganda and Kenya (north), Indian Ocean (east), Mozambique, Malawi, and Zambia (south and southwest), and Burundi and Rwanda (west). ➤ It also shares a border with famous lakes such as Victoria, Nyasa and Tanganyika (world's second deepest lake). ● Geographical features <ul style="list-style-type: none"> ➤ Major River: Rufiji River. ➤ Highest point: Kilimanjaro. ➤ East African Rift System runs in two north-south-trending branches through mainland Tanzania. 