

January - 22

TNPSC BITS

- ❖ Indian Renewable Energy Development Agency Limited (IREDA) has signed a joint venture agreement with Nepal Electricity Authority (NEA) to develop the 900 MW Upper Karnali Hydropower Project in Nepal.
- ❖ The Centre for Development of Telematics has signed an agreement with IIT Mandi in collaboration with the IIT Jammu, for the development of "Wideband Spectrum-Sensor ASIC-Chip for Enhancing the Spectrum Utilization".
- ❖ The India Pavilion inaugurated at Heimtextil 2025 in Frankfurt, Germany.
- ❖ The world's first 52x52x52 'Mahamrityunjaya Yantra' has been installed at Tapovan Ashram in Jhunsi Havelis in Prayagraj, Uttar Pradesh.
- ❖ The "One Plate, One Bag" campaign was launched for plastic-free Maha Kumbh in Uttar Pradesh to replace plastic bags and disposable items.
- ❖ Maharashtra has announced the formation of a 16-member committee tasked with submitting recommendations for the Artificial Intelligence Policy 2025.
- ❖ Assam police chief Gyanendra Pratap Singh has been appointed Director General of the Central Reserve Police Force (CRPF).

NATIONAL

NBM 2.0 & Sanchar Saathi App



- ❖ The Centre has launched the Sanchar Saathi Mobile App, National Broadband Mission (NBM) 2.0.

- ❖ It also inaugurated the Intra Circle Roaming facility at DBN Funded 4G Mobile Sites.
- ❖ The Sanchar Saathi Mobile App is a user-friendly platform designed to fortify telecom security and empower citizens.
- ❖ The NBM 2.0 aims to connect 1.7 lakh villages with broadband.
- ❖ DBN earlier known as USOF, has undertaken an important role in bridging the telecom gap across rural and remote areas through its extensive mobile tower projects.
- ❖ DBN 4G Sites Allows users to access 4G services from multiple telecom providers (BSNL, Airtel, Reliance).

Trusted Traveler Program



- ❖ The Centre inaugurates Fast Track Immigration – Trusted Traveller Programme (FTI-TTP) at Mumbai, Chennai, Kolkata, Bengaluru, Hyderabad, Cochin and Ahmedabad airports.
- ❖ It aims to facilitate international mobility with faster, smoother and more secure immigration clearance for Indian Nationals and OCI passengers.
- ❖ After necessary verification, a white list of 'Trusted Travellers' will be generated and fed for implementation through e-gates.
- ❖ The registered passenger has to scan their boarding pass issued by the airlines at the e-gates and then scan their passport.
- ❖ The biometrics of the passenger will be authenticated at the e-gates.

- ❖ On such authentication, the e-gate will open automatically and the immigration clearance will be deemed to have been granted.

INTERNATIONAL

La Perouse' 25 Multinational Naval exercise

- ❖ The Indian Navy is participating in a mega wargame along with naval forces from eight nations including the US and France.
- ❖ The naval exercise is underway in the straits between the Indian Ocean and the Pacific Ocean as well as Malacca, Sunda and Lombok.
- ❖ Besides, India, the US and France, the naval forces from Australia, Indonesia, Malaysia, Singapore, Canada and the UK are participating in the exercise.



ECONOMY

FEMA Regulations Update 2025

- ❖ The RBI in collaboration with the central government, has reviewed the current regulations under Foreign Exchange Management Act, 1999
- ❖ It aims to promote cross-border transactions in rupees and other local or national currencies.
- ❖ The Authorised dealer banks' overseas branches can now open INR accounts for residents outside India.
- ❖ It is facilitating the settlement of all permissible current and capital account transactions with residents in India.

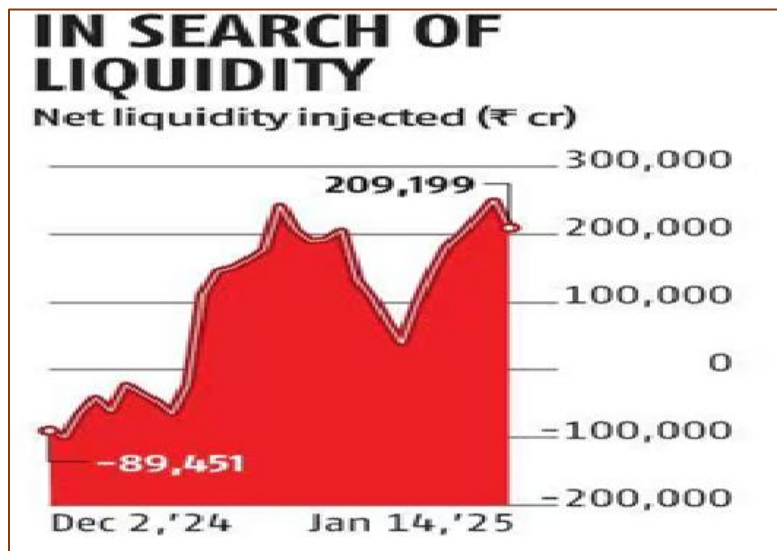
- ❖ Residents outside India can use the balances in their repatriable INR accounts, to settle legitimate transactions with other non-resident individuals.
- ❖ Residents outside India can use their repatriable INR account balances for foreign investments, including Foreign Direct Investment (FDI) in non-debt instruments.
- ❖ Indian exporters are now allowed to open foreign currency accounts abroad to settle trade transactions, receive export proceeds, and use those funds to pay for imports.

TIMES ITS MOVE TO PERFECTION



- Exporters will now be able to open accounts in any foreign currency overseas to settle trade transactions
- RBI to permit overseas branches of authorised banks to open rupee-accounts for anyone residing outside the country
- Decision comes at a time when the rupee is sliding and touched an all-time low of 86.70 per dollar on Monday
- In July 2022, an additional arrangement in the form of Special Rupee Vostro Account was introduced
- RBI has already signed MoUs with central banks of the UAE, Indonesia and the Maldives
- RBI has also allowed NRIs to use such balances in rupee a/cs for foreign investments

RBI - Daily VRR Auctions

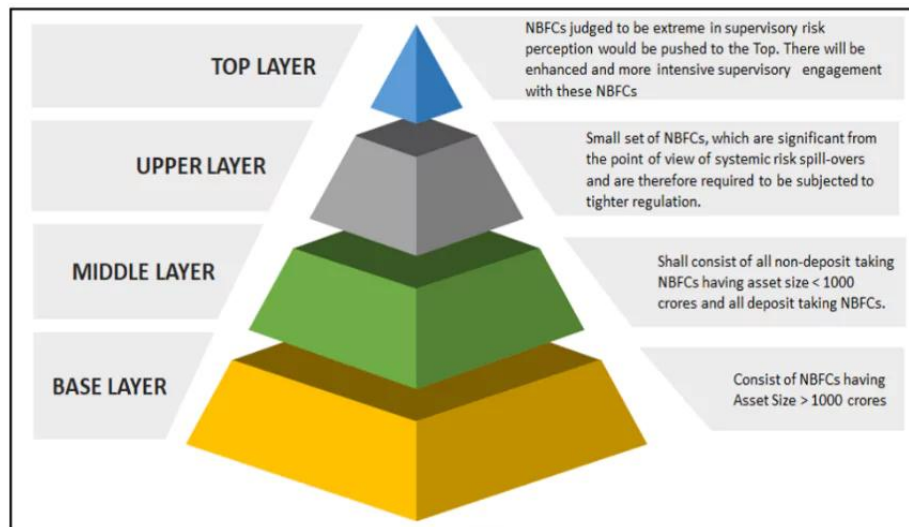


- ❖ RBI decided to conduct variable-rate repo auctions on a daily basis in order to boost banking system liquidity.

- ❖ The VRR auctions will be conducted between 10:00 a.m. and 10:30 a.m. every day and will be reversed the following day.
- ❖ RBI usually conducts VRR auctions to inject liquidity into the banking system when it turns into deficit mode.

NBFC upper layer list for year 2024-25

- ❖ The RBI released the list of non-banking finance companies (NBFCs) in the upper layer segment for the year 2024-25.
- ❖ The Reserve Bank had also issued the Scale Based Regulation (SBR), A Revised Regulatory Framework for NBFCs (the framework) on 22 October 2021.
- ❖ The framework categorises NBFCs in Base Layer (NBFC-BL), Middle Layer (NBFC-ML), Upper Layer (NBFC-UL) and Top Layer (NBFC-TL).
- ❖ It also gives the methodology to identify the NBFCs in the Upper Layer as per their asset size and scoring methodology.



SCIENCE AND TECHNOLOGY

Waste Heat Energy Conversion

- ❖ The JNCASR – Bengaluru (the Jawaharlal Nehru Centre for Advanced Scientific Research), have developed a cutting-edge material capable of converting waste heat into energy with unprecedented efficiency.
- ❖ The team has synthesised a novel thermoelectric material by introducing twisted layers in ferecristals, a unique class of misfit layered compounds.





- ❖ The material, based on tin selenide (SnSe), exhibits a thermoelectric figure of the merit of 2.3, the highest reported for n-type materials.
- ❖ With about 65 per cent of all the utilised energy being lost as heat in nature, thermoelectric materials offer a sustainable solution by converting waste heat into electricity without emitting harmful gases like CO₂.
- ❖ Ferrecrystals are a subclass of misfit layered compounds (MLCs), which are 2D superlattices made of alternating layers of different structures.

WASTE HEAT TO ELECTRICITY CONVERSION
New material developed by JNCASR to convert waste heat into electricity!

Highly Efficient:
Makes better use of waste heat, turning it into usable energy


BENEFITS

Industries can use heat from machinery to generate electricity, reducing energy bills

-  **SAVES ENERGY**
No more wasting heat, as it is turned into power
-  **REDUCES POLLUTION**
Less need to burn fuel for extra electricity
-  **CUTS COSTS**
Saves money on energy for industries and individuals
-  **ENVIRONMENT-FRIENDLY**
Supports cleaner and greener energy use

Can be harnessed by
Factories, Power Plants, Vehicles etc.

Powering a Greener Tomorrow!



ENVIRONMENT

Water Hyacinth issue - Kenya



- ❖ Water hyacinth, the world's most widespread invasive species, is blanketing the Lake Naivasha of Nairobi, Kenya.

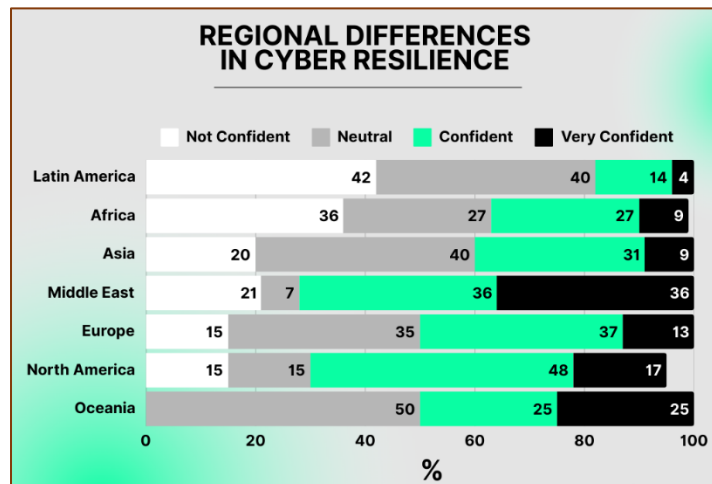


- ❖ The water hyacinth is native to South America and was reportedly introduced to Kenya in the 1980s.
- ❖ Water Hyacinth is scientifically known as Eichhornia crassipes.
- ❖ It is an aquatic weed common in water bodies across South Asia, including India.
- ❖ It was introduced to India during the British colonial rule as an ornamental aquatic plant from South America.

REPORTS AND INDICES

Global Cybersecurity Outlook 2025

- ❖ It was released by World Economic Forum in collaboration with Accenture.
- ❖ A growing 8% skills gap leaves two-thirds of organizations unable to address security needs effectively.
- ❖ There is a shortfall which is ranging from 2.8 million to 4.8 million cybersecurity professionals.
- ❖ Nearly 49% of public-sector organizations lack sufficient cybersecurity talent.
- ❖ Around 42% in Latin America and 36% in Africa lack confidence in cybersecurity preparedness, compared to 15% in Europe and North America.



STATES

Archaeological Experiential Museum in Vadnagar

- ❖ The museum designed to offer a comprehensive look at the city's 2,500-year-old history through an immersive and interactive experience.

- ❖ It showcases more than 5,000 artifacts, offering an in-depth look into the city's cultural narrative.
- ❖ Vadnagar is located in Gujarat's Mehsana district.
- ❖ It is renowned for its unique blend of Hindu, Buddhist, Jain, and Islamic cultural influences.



SPORTS

First ever Kho-Kho World Cup 2025



- ❖ The 1st edition of Kho-Kho World Cup 2025 game was hosted by India.
- ❖ The tournament featured 20 men's and 19 women's teams.

- ❖ The Indian men and women's team claimed victory in the inaugural edition against Nepal team.

MISCELLANEOUS

2025 World Monuments Watch



- ❖ The list includes a pick of 25 sites from 29 countries that it feels need to help advocacy and protection.
- ❖ The 'Musi River Historic Buildings' in Hyderabad have been put on the 2025 World Monuments Watch.
- ❖ Gujarat's 'Bhuj Historic Water Systems' is the other site in India named by the WMF on its list of sites facing risk due to the water crisis and climate change.

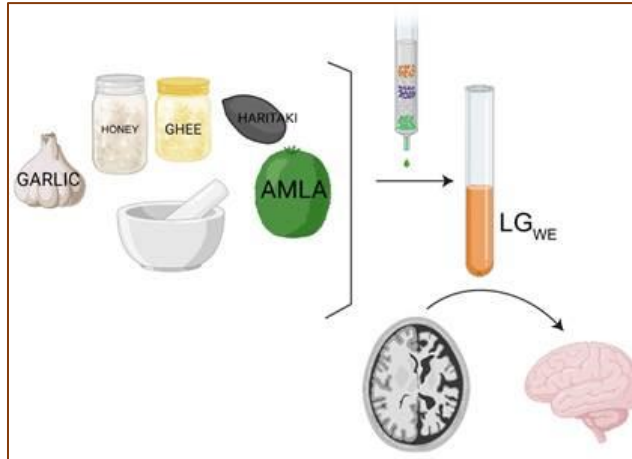
Global Lighthouse network 2025



- ❖ CEAT factory in Tamil Nadu's Sriperumbudur and Hindustan Unilever Limited in Assam's Tinsukia have joined the cohort of WEF's (the World Economic Forum) Global Lighthouse Network.

- ❖ It is a community of industry leaders pioneering the use of cutting-edge Fourth Industrial Revolution technologies in manufacturing.
- ❖ WEF added 18 new members to the network, out of which two are from India.

Ayurvedic Treatment for Alzheimer's Disease



- ❖ The Researchers are demonstrating the potential of Ayurvedic medicine alongside chemically synthesized solutions to combat the damaging effects of amyloid beta aggregation.
- ❖ It is a critical factor in Alzheimer's progression.
- ❖ Alzheimer's disease is often associated with the buildup of amyloid proteins in the brain, which form toxic clumps that disrupt normal function.

