Testwale Current Affairs PDF

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1. NGEL and ITL sign MoU for Renewable Energy Ventures (April 23, 2024)

NTPC Green Energy Limited (NGEL) and Indus Towers Limited (ITL) have entered into a Memorandum of Understanding (MoU) to support green energy goals and India's carbon-neutral aspirations.

An Overview of the News

- The collaboration aims to jointly develop grid-connected renewable energy projects, including solar, wind, and energy storage solutions.
- Signatories to the MoU are Soumya Kanti Chowdhuri, Chief General Manager of NGEL, and Vikas Poddar, Chief Financial Officer (CFO) of ITL.
- NGEL operates as a wholly-owned subsidiary of NTPC Limited, formerly known as the National Thermal Power Corporation.

About ITL

- Indus Towers Limited, based in Gurugram, Haryana, is an Indian telecommunications infrastructure firm.
- Established in November 2007 by Bharti Infratel, Vodafone Essar, and Idea Cellular.
- It specializes in offering passive infrastructure services to mobile network operators and other wireless service providers.
- The company's primary objective is to provide shared telecom infrastructure to operators without discrimination.
    - Headquarters - DLF Cyber City, Gurugram, Haryana
    - Chairman - N. Kumar
    - MD & CEO - Prachur Shah

2. Intel Unveils 'Hala Point': The World's Largest Neuromorphic System for Sustainable AI (April 22, 2024)

Intel Corporation, a leading semiconductor manufacturer, unveils 'Hala Point,' the world's largest neuromorphic system.

An Overview of the News

- Codenamed 'Hala Point,' the system is designed to advance sustainable Artificial Intelligence (AI) initiatives.

Key Features of 'Hala Point':

- Initial deployment: The system is deployed at Sandia National Laboratories, leveraging Intel's Loihi 2 processor.

- Aim: 'Hala Point' aims to facilitate research into future brain-inspired AI while addressing current AI's efficiency and sustainability challenges.
- Evolution: Building upon Intel's first-generation large-scale research system, Pohoiki Springs, 'Hala Point' introduces architectural enhancements.
- Performance: The system boasts over 10 times more neuron capacity and up to 12 times higher performance compared to its predecessor.

Operational Capabilities:

- Processing Power: 'Hala Point' supports up to 20 quadrillion operations per second.
- Efficiency: Remarkably, the system achieves an efficiency exceeding 15 trillion 8-bit operations per second per watt (TOPS/W) when executing conventional deep neural networks.

3. DRDO Successfully Tests Indigenous Cruise Missile at Odisha (April 22, 2024)

On April 18, 2024, the Defence Research and Development Organisation (DRDO) conducted a successful flight-test of the Indigenous Technology Cruise Missile (ITCM) from the Integrated Test Range (ITR) in Chandipur, Odisha.

An Overview of the News

Features of Indigenous Technology Cruise Missile (ITCM):

- Advanced Avionics: Equipped with advanced avionics and software to ensure enhanced and reliable performance.
- Development: Developed by DRDO's Aeronautical Development Establishment (ADE) in Bengaluru, Karnataka, with contributions from other Indian laboratories and industries.
- Propulsion System: The missile features an indigenous propulsion system developed by the Gas Turbine Research Establishment (GTRE) in Bengaluru, Karnataka.

Key Observations during the Test:

- Range Sensors: Various Range Sensors including Radar, Electro Optical Tracking System (ETOS), and Telemetry deployed by ITR at different locations to ensure comprehensive coverage of the flight path.
- Monitoring from Aircraft: The flight of the missile was monitored from the Su-30-Mk-I aircraft of the Indian Air Force (IAF).

About ADE:

- Responsibility: A laboratory of DRDO entrusted with conducting research and development in military aviation.
- Director: Y Dilip

- Headquarters: Located in Bengaluru, Karnataka.

4. India Sends Inaugural BrahMos Missile Shipment to Philippines in Defense Pact Fulfillment (April 20, 2024)

India delivered its first BrahMos supersonic cruise missiles to the Philippines under a $375 million deal signed in January 2022.

An Overview of the News

- The deal involves supplying three export versions of the BrahMos missile system along with integrated logistics support and training for operators and maintainers.
- The first batch of munitions has arrived in the Philippines after two years since the pact was signed.
- Components and Support Package:
- Each system delivered includes two missile launchers, a radar unit, and a command-and-control center.
- Additionally, an integrated logistics support package and training for operators and maintainers were part of the deal.

Arrival of First Batch:

- Two years after the agreement, the first batch of BrahMos missiles reached the Philippines.
- The system enables firing two missiles within 10 seconds, adaptable to various platforms like submarines, ships, aircraft, or land-based installations.

Export Process:

- The BrahMos missiles were transported from India to the Philippines via an Indian Air Force C-17 Globemaster jet.
- This marks India's inaugural export of BrahMos missiles.

Global Interest and Capabilities:

- Several nations, including Argentina, have shown interest in procuring BrahMos missiles from India.
- BrahMos missiles boast a speed of 2.8 Mach, nearly three times the speed of sound.

5. Government forms panel to promote scientific mining of critical minerals (April 19, 2024)

A **seven-member panel** has been set up by the government under the leadership of **NITI Aayog member Vijay Kumar Saraswat** to promote scientific mining of critical minerals.

An Overview of the News

- The panel's primary goal is **to propose legislative measures for the cost-effective and scientific extraction of critical minerals such as copper, gold, and diamond.**
- These minerals are often found in deeply embedded deposits, requiring underground mining for extraction.
- Strategies will be devised by the panel to raise awareness among states about the implications of mining reforms.
- In **2023, the Geological Survey of India (GSI)** discovered approximately 5.9 million tonnes of lithium deposits in the Salal-Haimana area of Jammu & Kashmir, crucial for electric vehicle manufacturing.

About Critical Minerals

- Critical minerals are vital for both economic development and national security.
- India's government has identified a list of **30 critical minerals.**
- These minerals include Antimony, Beryllium, Bismuth, Cobalt, Copper, Gallium, Germanium, Graphite, Hafnium, Indium, Lithium, Molybdenum, Niobium, Nickel, platinum group elements (PGE), Phosphorous, Potash, Rare Earth Elements (REE), Rhenium, Silicon, Strontium, Tantalum, Tellurium, Tin, Titanium, Tungsten, Vanadium, Zirconium, Selenium, and Cadmium.

6. New Endangered Balsam Species Discovered in Kerala's Agasthyamala Biosphere Reserve (April 18, 2024)

A new species of the genus Impatiens (family Balsaminaceae), named "Impatiens neo-uncinata," was discovered in the Agasthyamala biosphere reserve, Thiruvananthapuram district, Kerala, during a floristic survey.

An Overview of the News

- The discovery was documented in the scientific journal Phytotaxa.
- "Impatiens neo-uncinata" shares morphological similarities with Impatiens uncinata but varies in flower size, basal and distal lobes, dorsal petal, and pollen.
- It features snowy white flowers with red stripes and relatively large blooms.
- The new species has only been observed in a single locality at elevations ranging from 1,000 to 1,250 meters and is classified as Endangered according to IUCN criteria.
- The genus Impatiens encompasses over 1000 species found in tropical and sub-tropical regions.

About Kerala

- Kerala, situated on India's Malabar Coast, boasts nearly 600km of Arabian Sea coastline.

- Famous for its palm-fringed beaches and intricate network of backwaters.

Capital - Thiruvananthapuram

Chief Minister - Pinarayi Vijayan

Districts - 14

Demonyms - Keralite, Malayali

7. Successful MPATGM Warhead Flight Trials Conducted by Indian Army and DRDO (April 16, 2024)

The Indian Army and DRDO recently conducted successful warhead flight trials of the Man Portable Anti-tank Guided Missile (MPATGM) Weapon System on April 13, 2024, at the Pokhran Field Firing Range in Rajasthan.

An Overview of the News

- Components of the MPATGM Weapon system include the MPATGM itself, Launcher, Target Acquisition System (TAS), and Fire Control Unit (FCU).
- MPATGM was developed domestically by DRDO in collaboration with VEM Technologies Private Limited, based in Hyderabad, Telangana.
- The trials aimed at meeting the operational requirements specified in the General Staff Qualitative Requirements (Infantry, Indian Army), covering the complete operational envelope.
- Successful penetration trials of the Tandem Warhead System of MPATGM were also conducted during these trials.

Key Features of MPATGM:

- The missile is approximately 1.3 meters long with a diameter of around 0.12 meters.
- It has a strike range of 2.5 kilometers and weighs about 14.5 kilograms.
- Equipped with a modern Infrared Imaging Seeker and advanced avionics.

Manufacturing Location:

- Bharat Dynamics Limited (BDL) in Bhanoor, Telangana, is designated for its manufacturing.

About DRDO

- It serves as the Research and Development (R&D) arm of the Ministry of Defence (MoD).
- Chairman - Dr. Samir Venkatpati Kamat
- HQ - New Delhi, Delhi

- Founded - 1958

8. Israel's C-Dome Defense System Successfully Deployed in Eilat for First Time (April 15, 2024)

Israel has introduced its maritime defense system, known as the C-Dome, for the first time in Eilat, Israel's southernmost city.

An Overview of the News

- The C-Dome is essentially a naval adaptation of the Iron Dome, a renowned air defense system designed to safeguard against rocket and missile threats.
- Notably, on April 8, 2024, the Israel Defence Forces (IDF) effectively intercepted a suspicious airborne target breaching Israeli airspace using the C-Dome defense mechanism.
- The C-Dome Defense System is a product of Rafael Advanced Defense Systems, a state-owned Israeli defense corporation.

About IDF:

- The Israel Defense Forces (IDF), also known as Tzahal in Hebrew, serves as the national military of the State of Israel.
- Comprising three main service branches, namely the Israeli Ground Forces, the Israeli Air Force, and the Israeli Navy, it covers various aspects of defense.
- As the singular military arm of Israel's security infrastructure, the IDF holds exclusive responsibility for national defense.

9. Roscosmos Launches 1st Angara-A5 Rocket from Vostochny Cosmodrome (April 15, 2024)

Angara-A5 successfully launched on April 11, 2024, from Vostochny Cosmodrome, replacing Proton M as Russia's heavy-lift rocket.

An Overview of the News

- The rocket attained speeds exceeding 25,000 km/hr and placed a test payload into low orbit.
- The launch coincided with Russia's Cosmonaut Day on April 12, commemorating Yuri Gagarin's historic spaceflight in 1961.
- It will replace Russia's heavy-lift rocket Proton-M, which has served in this role since the mid-1960s.

Angara-A5:

- The Angara-A5 stands 54.5 meters tall and comprises three stages, with a hefty weight of approximately 773 tonnes.

- It boasts a payload capacity of up to 24.5 tonnes to lower orbit.
- Notably, the rocket employs a more environmentally friendly fuel combination of oxygen and kerosene, departing from the toxic heptyl used in previous models.
- The Angara series, developed by the Khrunichev State Research and Production Space Centre, derives its name from the Angara River, originating from Lake Baikal in Siberia.

Project Angara Origins:

- Conceptualized in 1991 following the dissolution of the Soviet Union, Project Angara aimed to diminish Russia's reliance on the Baikonur Cosmodrome, leased from Kazakhstan until 2050.

About Roscosmos:

- Headed by Director-General Yuri Ivanovich Borisov, Roscosmos operates from its headquarters in Moscow, Russia.
- Established in 1992, the agency has been instrumental in advancing Russia's space exploration endeavors.

10. SpaceX Launches Bandwagon-1: First Rideshare Mission to Low-Earth Orbit (April 9, 2024)

On April 7, 2024, Space Exploration Technologies Corporation (SpaceX) conducted the launch of Bandwagon-1.

An Overview of the News

- This marks the first rideshare mission to low-Earth orbit, facilitated by a Falcon 9 rocket.
- The launch took place from the National Aeronautics and Space Administration (NASA) Kennedy Space Center in Florida, United States of America (USA).

Key Satellites Carried:

- Bandwagon-1 carries a total of 11 satellites, each serving various purposes and organizations.
- Notable satellites include KOREA's 425Sat, HawkEye 360's Clusters 8 & 9, Tyvak International's CENTAURI-6, IQPS's QPS-Synthetic Aperture Radar (SAR)-7 TSUKUYOMI-II, Capella Space's Capella-14, and Tata Advanced Systems Limited's TSAT-1A.

Significance of the Launch:

- The inclusion of a '425 Project' satellite for the military of South Korea stands out as a significant aspect of this mission.
- This satellite is likely the largest among the 11 satellites carried by Bandwagon-1.

- It's noteworthy that the first 425 Project satellite, an optical/infrared spacecraft, was launched previously in December 2023 with a Falcon 9 rocket.