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NUCLEAR NON-PROLIFERATION TREATY (NPT)

Context

- Recently, **Iran's Foreign Ministry** has confirmed that **its Parliament is drafting legislation to withdraw from the Non-Proliferation of Nuclear Weapons (NPT) Treaty**.
 - It comes amid **escalating tensions with Israel** and renewed scrutiny from the **International Atomic Energy Agency (IAEA)**.

Nuclear Non-Proliferation Treaty (NPT): Background

- It is one of the most widely adhered-to arms control agreements **signed in 1968** and entered into force in **1970**.
 - It was **extended indefinitely in 1995**.
- Membership Provisions (Two Categories):**
 - Nuclear-Weapon States (NWS):** These are the **five countries** that had tested nuclear weapons **before January 1, 1967** — United States, Russia, China, France, and the United Kingdom.
 - Non-Nuclear-Weapon States (NNWS):** All other signatories **agree not to pursue nuclear weapons** and **to accept IAEA safeguards** on their nuclear activities.
- NPT established a **three-pillar framework**:
 - Non-Proliferation:** NWS agreed not to transfer nuclear weapons or assist NNWS in acquiring them.
 - Disarmament:** All parties committed to pursuing negotiations toward nuclear disarmament.
 - Peaceful Use of Nuclear Energy:** To access nuclear technology for peaceful purposes under IAEA safeguards.
- Withdrawal Clause (Article X of NPT):** It allows **any state to exit** if it determines that '*extraordinary events*' have jeopardized its supreme national interests, provided **it gives three months' notice to other signatories** and the **UN Security Council (UNSC)**.

Present Status

- A total of 191 States have joined the Treaty, including the five nuclear-weapon States.
- India, Pakistan, South Sudan and Israel never joined the treaty**, however they are **known or believed to possess nuclear weapons**.
- North Korea** joined the NPT in 1985 but **withdrew in 2003**.

Other Important Nuclear Disarmament Treaties

- Strategic Arms Reduction Treaty (START I & II), 1991–1993:** These were signed between the **USA and the Soviet Union** (later Russia), aimed to **reduce deployed strategic nuclear warheads**.
- Comprehensive Nuclear-Test-Ban Treaty (CTBT), 1996:** It **bans all nuclear explosions** for **both civilian and military** purposes.
 - It has **not entered into force** due to the **non-ratification** by the USA, China, India, and Pakistan.
- Treaty on the Prohibition of Nuclear Weapons (TPNW), 2017:** It is the **first legally binding** international agreement to comprehensively prohibit nuclear weapons.
 - It **entered into force in 2021**, though none of the nuclear-armed states have joined.
- New START Treaty, 2010:** It limits the number of deployed strategic nuclear warheads and delivery systems.

India's Approach NPT

- India's position on the Treaty has **remained consistent since the treaty's inception** in 1968.
- India's primary objection** lies in the treaty's division of the **world into nuclear 'haves' and 'have-nots'**.
- India's refusal to sign was based on '*enlightened self-interest and considerations of national security*', as highlighted by former Prime Minister Indira Gandhi in Parliament.

India's Alternative Vision

- India has consistently advocated for a **universal, non-discriminatory, and verifiable disarmament regime**.
- India has proposed a **Nuclear Weapons Convention** that would ban the development, production, and use of nuclear weapons globally.
- Voluntary Commitments and Responsible Conduct By India:**
 - It maintains a voluntary moratorium on nuclear testing.
 - It adheres to a **No First Use (NFU) policy**.
 - It has implemented **stringent export controls** and aligned with global regimes like the **Missile Technology Control Regime (MTCR)** and the **Wassenaar Arrangement**.
- India's 2008 Civil Nuclear Agreement with the USA** and subsequent waiver from the **Nuclear Suppliers Group (NSG)** further acknowledged its responsible nuclear behavior.

Concerns & Challenges

- **Disarmament Stalemate:** Critics argue that nuclear-weapon states have not made sufficient progress toward **disarmament (Article VI of Treaty)**, undermining the treaty's credibility.
- **Non-Compliance and Withdrawal:** North Korea's withdrawal and Iran's contested nuclear activities have tested the treaty's enforcement mechanisms.
- **Technological Dual-Use Dilemma:** Peaceful nuclear technology can be diverted for weapons development, raising concerns about proliferation risks.

Future Outlook

- **Strengthening Verification:** Expanding the IAEA's role and universalizing the Additional Protocol could enhance transparency and trust.
- **Bridging the Disarmament Gap:** Renewed commitment by nuclear powers to reduce arsenals is essential to maintain the treaty's legitimacy.
- **Addressing Non-Signatories:** Engaging India, Pakistan, and Israel in parallel frameworks may help integrate them into the global non-proliferation regime.
- **Preventing Weaponization of New Technologies:** The rise of cyber threats and autonomous systems necessitates updated safeguards.
- Preparatory process for the **NPT Review Conference (2026)**, held every five years to assess progress and address emerging threats, is underway.

Source: DD News

UK ASSISTED DYING BILL

Context

- The U.K. House of Commons passed the **Assisted Dying Bill** to allow **terminally ill people in England and Wales to end their lives**.

About

- The bill will only apply to people in England and Wales **who have less than six months to live**.
 - ♦ A patient choosing to die would need to be of **competent mind** and **two doctors, a psychiatrist, senior lawyer and social worker** would need to sign off on their decision.
- **Advocates** regard the new Bill as a **humane and compassionate intervention** that brings closure to a painful dependence on the immediate family.

- **Opponents** are apprehensive that the severely disabled and vulnerable patients may feel forced to end their lives to relieve the burden on relatives.

What is Assisted Dying?

- Assisted dying refers to the **act of helping someone intentionally end their life**, typically to relieve suffering from a terminal illness or severe, untreatable pain.
- **There are two main forms:**
 - ♦ **Assisted Suicide:** A person, with the help of a medical professional or another person, takes their own life, usually by consuming a prescribed lethal dose of medication.
 - ♦ **Euthanasia:** A doctor or healthcare provider actively administers a lethal substance to end the life of a patient, typically at their request, to relieve extreme suffering.

Status Across the Globe

- **The practice of assisted dying** is highly controversial and is **legal in only a few countries or regions**, with strict guidelines and regulations where it is permitted.
 - ♦ **Switzerland** was the first country which in **1942** legalised assisted dying.
 - ♦ **Across Europe, six countries have some form of legalised assisted dying:** Switzerland, the Netherlands, Belgium, Luxembourg, Spain and Austria.
 - ♦ Later on the **U.S., Australia and New Zealand** enacted related legislations.
 - ♦ **Canada's 2016 Medical Assistance in Dying law** may be availed even by those whose condition is not terminal.

What is the position in India?

- The Supreme Court had in **2018 legalised passive euthanasia**, contingent upon the person having a "living will".


IN THE SUPREME COURT

2011: *Aruna Shanbaug v. Union of India* recognised that life-sustaining treatment could legally be withheld/ withdrawn even from persons without decision-making capacity.

2018: *Common Cause v. Union of India* recognised the right to die with dignity as a fundamental right under Article 21 of the Constitution

of India, and legalised the use of advance medical directives or 'living wills'.

2023: *Common Cause v. Union of India* simplified the process for making living wills and withholding/ withdrawing life-sustaining treatment by removing bureaucratic hurdles.



- ♦ SC held that the **'right to die with dignity'** forms a part of the **right to life under Article 21** of the Constitution of India.
- ♦ A **living will is a written document** that specifies the **actions to be taken if the person is** unable to make their own medical decisions in the future.
- ♦ **Goa is the first state that has formalised**, to some extent, the implementation of directives issued by the Supreme Court.
- In 2024, the **Health Ministry released draft guidelines** on withdrawing medical support for terminally ill patients.
 - ♦ These specify that doctors must refrain from initiating life-support measures when they offer no benefit to the patient and are likely to cause suffering and a loss of dignity.

Arguments in Favour of Assisted Dying

- **Autonomy and Choice:** Individuals should have the right to make decisions about their own lives, including the choice to end it to avoid prolonged suffering.
- **Relief from Suffering:** Assisted dying provides a compassionate option for those with terminal illnesses or unbearable pain, allowing them to die with dignity.
- **Quality of Life:** For some, the quality of life may deteriorate to a point where death is seen as a better option than living with constant suffering or loss of independence.
- **Respect for Individual Rights:** People should have control over their bodies and lives, including the decision to end their life in a humane and controlled manner.

Arguments Against Assisted Dying

- **Moral and Ethical Concerns:** Many believe that taking a life, even at the person's request, is morally wrong and goes against the sanctity of life.
- **Risk of Abuse:** Vulnerable individuals, such as those with mental health issues or pressure from family, may be coerced into choosing assisted dying.
- **Medical Ethics:** Healthcare professionals are traditionally bound to preserve life, and assisted dying may conflict with the fundamental role of doctors in healing and care.
- **Alternative Solutions:** Advocates argue that palliative care and pain management can provide relief, making assisted dying unnecessary.

Way Ahead

- **Stronger Regulations:** Implementing strict legal safeguards to ensure it is only available to those who meet specific criteria.
- **Palliative Care Expansion:** Improving access to high-quality palliative care to address suffering and reduce the demand for assisted dying.
- **Public Debate:** Ongoing discussions about the moral, legal, and ethical implications of assisted dying, can be considered while framing the guidelines.
- **International Perspective:** Countries may look to those with legal assisted dying frameworks for guidance on effective regulation and safeguards.
- **Mental Health Support:** Providing psychological evaluations to prevent coercion or impulsive decisions and ensure informed consent is given.

Source: TH

UNDERSTANDING PAKISTAN'S BALANCING ACT ON IRAN

Context

- Pakistan has extended **strong rhetorical support to Iran amid the ongoing Iran-Israel conflict**.

Iran and Pakistan Relations

- **Foundational Ties:** Iran was the first country to recognize Pakistan after its independence in 1947.
 - ♦ Iran provided **military and diplomatic support to Pakistan** during the 1965 and 1971 wars with India.
 - ♦ Despite shared Islamic identity, ties have been marked by deep mistrust, particularly since the 1979 Iranian Revolution, which redefined Iran's geopolitical stance.



- **Border Tensions and the Baloch Question:** The 900-km Iran-Pakistan border runs through the Baloch heartland, with the Pak province of Balochistan on one side and the Iranian province of Sistan-Baluchistan on the other.

- ♦ Each side accuses the other of **providing safe haven to separatist groups**.
- ♦ There have been at least 15 border clashes in the past decade, most recently in January 2024.
- **Divergence over Afghanistan:** Iran (Shia-Majority) supported the anti-Taliban Northern Alliance in the 1990s, out of concerns stemming from a strongly anti-Shia group (Taliban) ruling a neighbour with which it shares a 921-km-border.
- ♦ Pakistan has historically backed the Taliban, resulting in conflicting regional stakes in Afghanistan.
- **Sectarian Dimensions and the Saudi Factor:** Pakistan's close alliance with Saudi Arabia, a Sunni-majority power, has strained ties with Iran.
- ♦ Saudi-funded Sunni madrasas in Pakistan have fostered sectarian ideologies against Shia minorities.
- ♦ Iran sees this as part of a broader Sunni axis hostile to its interests.

The American Angle: Divergent Alignments

- Post-1979, Iran has remained hostile to the US, while Pakistan has relied on American support, particularly during the Cold War.
- ♦ Post-9/11 era, Pakistan was a key US ally against the Taliban, receiving massive military and economic aid.
- **US disengagement post-2021** (after the Afghanistan exit) has reduced Pakistan's value America's strategic calculus.
- Now, Iran–Israel tensions offer Pakistan a **potential diplomatic opening to regain relevance in US eyes**:
 - ♦ **Publicly rejecting military support** for Iran reassures US.
 - ♦ **Pakistan is also pitching itself as a mediator**, with Foreign Minister claiming efforts to amplify Iran's willingness to negotiate with the US, contingent on a halt in Israeli strikes.

How is Iran strategically important to India?

- India and Iran share deep civilisational, linguistic, and historical ties. Post-independence, they signed a friendship treaty in 1950.
- ♦ Key milestones include the 2001 Tehran Declaration and the New Delhi Declaration, which strengthened cooperation in areas like economy, energy, education, and counter-terrorism.
- Iran is extremely important for India as a strategic partner as it offers connectivity, particularly

through the Chabahar Port and the International NorthSouth Transport Corridor (INSTC).

- These provide alternative trade routes, bypassing Pakistan and enhance access to Central Asia and beyond.

Emerging challenges

- Pakistan's actions amid the Iran-Israel conflict reflect a broader strategy to regain regional relevance and re-engage with the US.
- **Pakistan's balancing act involves:**
 - ♦ Vocal non-military support to Iran. Leveraging diplomatic tools to remain relevant post-Afghanistan.
- Pakistan also sees rhetorical support for Iran as a way to weaken India-Iran ties, especially given India's strategic investments in Iran's Chabahar Port and connectivity projects that bypass Pakistan.

Conclusion

- The Iran–Pakistan relationship is a **strategic paradox** which on the surface are **Islamic allies** with **historical ties** but in reality are **geopolitical competitors, deeply divided over sectarian, regional, and global alignments**.
 - ♦ The US factor, India's strategic outreach to Iran, and the Israel–Iran crisis add **further layers to this dynamic**.
- For India, understanding this relationship is key to **protecting its interests in Iran** and **maintaining regional balance** in the face of Pakistan's recalibrated foreign policy.

Source: IE

STEEL INDUSTRY IN INDIA

In News

- Recently, the Ministry of Steel has extended Bureau of Indian Standards (BIS) quality norms to steel inputs and imports, giving industry players less than one working day to comply.

Tight spot

Inputs to make steel and steel products, including imports, will have to meet BIS norms, says govt. notification



- Requirement will increase compliance burden, costs for steel importers, rues industry
- More problem for those importing semi-finished goods, says EEPIC chairman
- Less than a day between order and announcement "not enough" for full compliance

India's Steel Sector

- Steel has been a key driver of industrialization and is considered a foundation of economic development.
- As both a raw material and intermediate product, its production and consumption reflect a nation's growth.
- In India, the steel industry is divided into three categories: major producers, main producers, and secondary producers.

Present status

- India is the **world's second largest crude steel** producer after China with production of 144.3 million tonnes crude steel in FY 2023-24.
- India was **net importer of finished steel** during 2023-24 with export of 7.49 million tonnes and import of 8.32 million tonnes.
- The steel sector is vital to India's economy, **contributing about 2% to GDP**.

Steps

- The Government of India has launched the **Purvodaya programme** which aims to accelerate the development of eastern India through the establishment of an integrated steel hub.
- The **National Steel Policy, 2017** envisages 300 million tonnes of production capacity by 2030-31.
- In the Union Budget **2024-25**, Basic Customs Duty (BCD) has been reduced from **2.5% to Nil on Ferro-Nickel** and Molybdenum ores and concentrates which are raw materials for the steel industry.
 - ♦ BCD exemption on Ferrous Scrap and specified raw material for manufacture of CRGO steel has been continued upto 31.03.2026.
- **Implementation of Domestically Manufactured Iron & Steel Products (DMI&SP)** Policy for promoting 'Made in India' steel for Government procurement.
- **Launching of the Production Linked Incentive (PLI) Scheme** for Specialty Steel to promote the manufacturing of 'Specialty Steel' within the country and reduce imports by attracting capital investments.
- **Revamping of Steel Import Monitoring System (SIMS) 2.0** for more effective monitoring of imports to address the concerns of the domestic steel industry.

- **Introduction of Steel Quality Control Order** thereby banning sub-standard/ defective steel products in domestic market as well as imports to ensure the availability of quality steel to the industry, users and public at large.

Challenges and Concerns

- **India's steel industry** is facing major challenges due to a surge in cheap Chinese exports, which have hurt both domestic prices and export competitiveness.
- Indian steelmakers warn that without protective measures like safeguard duties, India risks becoming a dumping ground for global steel surpluses.
- The lack of government support and abrupt implementation without adequate notice has drawn strong criticism from industry stakeholders.

Way Forward

- The steel industry has emerged as a major focus area given the dependence of a diverse range of sectors on its output as India works to become a manufacturing powerhouse through policy initiatives like Make in India.
- Despite high Chinese exports, India remains a strong growth market.
- India must proactively implement safeguard measures to reduce its reliance on imports and promote domestic steel production to ensure atmanirbharta and long-term competitiveness.

Source :TH

INDIA TO CUT LOGISTICS COST TO 9% BY YEAR-END

Context

- The Union Road Transport and Highways Minister has said that India's logistics cost will come down to 9% by the Year-End.

Background

- **Logistics cost refers to** the total expenditure incurred to move goods from the point of origin to the point of consumption.
 - ♦ It includes Transportation cost, Warehousing cost, Inventory carrying cost and Packaging and administrative cost.
- The **Economic Survey 2022-23** pointed out that logistics costs in India have been in the range of **14-18% of GDP** against the global benchmark of **8%**.

India's logistics sector

- The logistics industry plays a vital role in the dynamic economic landscape of India by enabling the efficient movement of goods and services throughout the country's large territory.
- The Indian logistics sector is one of the largest in the world and presents a huge addressable opportunity.
- The warehousing and logistics sector contributes 13-14% to India's GDP and is expanding to keep pace with the country's rapid economic growth.
- In **2023**, India ranked **38** out of the **139 nations** in the **World Bank's Logistics Performance Index (LPI)**, up six places from the previous rankings in **2018**.

Benefits of a Robust Logistics sector

- **Economic Competitiveness:** Efficient logistics reduces overall cost of goods and services, improving India's ability to compete globally.
- **Boosts Exports and Trade:** Reliable, cost-effective logistics reduce turnaround time and improve delivery commitments.
- **Industrial Growth:** Reduces input cost and improves Just-in-Time (JIT) production models.
- **Improves Ease of Doing Business:** Efficient goods movement reduces compliance burden and inventory cost for businesses.
 - ♦ Encourages both domestic and foreign investment.
- **Strengthens Supply Chain Resilience:** Minimises disruption risks and delays, enhancing supply chain predictability and flexibility.

Challenges with Logistics sector in India

- **Lack of Technology Adoption:** Slow adoption of advanced technologies, such as Internet of Things (IoT), RFID (Radio-Frequency Identification), and automation.
 - ♦ The lack of technological integration results in manual processes, errors, and increased costs.
- **Infrastructure Bottlenecks:** Inadequate infrastructure, especially in terms of roads, ports, and last-mile connectivity, along with Poor road conditions and congestion can lead to delays and increased costs.
- **Higher logistics costs:** India's expenditure on logistics costs amounts to approximately **13-14% of its Gross Domestic Product (GDP)**, which is

considerably higher than the global average of around **8%**.

- **Inefficient Warehousing:** Inefficiencies in warehousing, such as outdated infrastructure, lack of automation, and inadequate storage capacity, contribute to higher logistics costs.
- **Limited Modal Choice:** Overreliance on road transport and limited use of alternative modes such as rail and coastal shipping contribute to higher logistics costs.

Steps taken by Government of India

- **Grant of Infrastructure status to Logistics sector:** The government has granted infrastructure status to the logistics sector, enabling the industry to access cheaper finances.
- **PM Gati Shakti's initiative:** It is a National Master Plan focused on multimodal connectivity to reduce logistics costs and stimulate economic growth.
- **National Logistics Policy (NLP):** In 2022, NLP was launched to ensure quick last-mile delivery, end transport-related challenges, and ensure desired speed in the logistics sector.
 - ♦ The policy aims to reduce logistics costs from the current **14-18% of GDP** to **8% by 2030**, aligning with global best practices.
- **Dedicated Freight Corridors (DFCs):** The government is working on the construction of dedicated freight corridors such as the Eastern Dedicated Freight Corridor and the Western Dedicated Freight Corridor.
- **Bharatmala Pariyojana:** This is a flagship road and highways development program aimed at improving connectivity across the country. The project includes the development of economic corridors, inter-corridors, and feeder routes.
- **Sagarmala Project:** This initiative focuses on promoting port-led development to reduce logistics costs for domestic and export-import trade. It includes the development of ports, coastal shipping, and inland waterways.

Way Ahead

- **Digitalisation:** It enables the digitisation of documents and transactions, reducing paperwork and improving the overall efficiency of logistics operations.
- **Data analytics:** It can provide valuable insights into supply chain performance, allowing for better decision-making and optimisation of routes, inventory management, and resource allocation.

- **Technology upgradation:** Technologies such as barcode scanning, RFID, and real-time tracking can significantly enhance tracking and tracing capabilities, improving operational efficiency and reducing costs.
- **Warehouse efficiency:** Improved inventory accuracy, reduced warehouse stock, and optimized on-shelf stock availability, can enhance overall warehouse efficiency.

Concluding remarks

- As India positions itself as a global manufacturing alternative to China, efficient logistics will be key to outpacing competitors like Vietnam and Indonesia.
- Improved logistics performance will enhance trade competitiveness, generate employment, and help India emerge as a regional and global logistics hub.

Source: AIR

INDIA DEVELOPS SOLAR-BASED TECHNOLOGY FOR GREEN HYDROGEN GENERATION

Context

- Scientists have developed a scalable next-generation device that produces green hydrogen by splitting water molecules using only solar energy.

About the New Device

- **Core Innovation:** The device uses a silicon-based photoanode with n-i-p heterojunction architecture, composed of:
 - ♦ n-type TiO
 - ♦ intrinsic Si (undoped)
 - ♦ p-type NiO
- **Fabrication:** Done through magnetron sputtering, an industry-ready, scalable method.
- This new device has **high efficiency, low energy input, robust durability, and cost-effective materials.**

What is hydrogen?

- Hydrogen is the chemical element with the symbol H and **atomic number 1**.
- Hydrogen is the lightest element and the most abundant chemical substance in the universe, constituting roughly **75%** of all normal matter.
- It is **colorless, odorless, tasteless, non-toxic**, and **highly combustible gas**.

What is Green Hydrogen?

- **Green Hydrogen:** The hydrogen produced via electrolysis, the splitting of water into hydrogen and oxygen with electricity generated from renewable energy sources such as solar or wind, is known as Green hydrogen.
- **MNRE defines Green Hydrogen** as having a well-to-gate emission (i.e., including water treatment, electrolysis, gas purification, drying and compression of hydrogen) of not more than **2 kg CO₂ equivalent / kg H₂**.
- **Gujarat's Kandla port** is the first in India to have an operational Green Hydrogen plant using indigenous Electrolysers.

Hydrogen Colour	Mode of Production	Fuel	Carbon Intensity
Green Hydrogen	Electrolysis	Electricity from Wind, Solar, Geothermal, Tidal, Hydro	Near zero
Purple/Pink Hydrogen		Nuclear heat and electricity/Nuclear electricity in electrolysis	
Yellow Hydrogen		Solar electricity	
Blue Hydrogen	Steam Methane Reforming, Gasification + CCS	Natural gas and coal	Low
Turquoise Hydrogen	Pyrolysis	Natural gas	Medium/low – solid carbon by-product
Grey Hydrogen	Steam methane reforming (SMR)		Medium
Brown Hydrogen	Gasification	Coal – Brown: Lignite, Black: Black coal	Highest
Black Hydrogen			

Significance of Green Hydrogen

- **Energy Security:** India is the **third-largest oil consumer and fourth-largest crude oil importer**, and hydrogen technology will play a key role in reducing this reliance.
- **Industrial Decarbonisation:** Can replace fossil fuels in hard-to-abate sectors – steel, cement, ammonia, refineries.
- **Clean Mobility:** Powering fuel cell vehicles, trains, and ships.
- **Grid Stability:** Acts as an energy storage medium for intermittent renewables.

Challenges

- **Risks associated with the transportation:** Hydrogen in gaseous form is highly inflammable and difficult to transport, thereby making safety a primary concern.
- **High Production Costs:** The **levelized cost of electricity (LCOE) and electrolyzer costs** are major factors driving up the overall production costs.
- **Disparity in Production Costs:** A substantial disparity between **green hydrogen production costs (\$5.30- \$6.70 per kg)** and traditional grey/blue hydrogen production costs (\$1.9-\$2.4 per kg).

- **Technological Readiness:** The adoption rates and risk factors associated with futuristic technologies pose challenges for financing and scaling up production.

Government initiatives for Green Hydrogen

- **National Green Hydrogen Mission:** The mission was launched in **2023** with an outlay of **Rs. 19,744 crores**. It lays out a comprehensive roadmap to:
 - ♦ Identify and Create demand in potential sectors
 - ♦ Provide production incentives for setting up domestic capacity
 - ♦ Achieve **5 million metric tonnes** of green hydrogen production by 2030.
 - ♦ Averting nearly **50 MMT of CO₂** emissions annually.
 - ♦ Attract investments of about **USD 100 billion**.
 - ♦ Generate over 600,000 jobs.
- **The Green Hydrogen Certification Scheme** is a framework established to ensure the transparent and credible certification of green hydrogen production in India.
- **Green Hydrogen and Green Ammonia plants** have been exempted from Environmental Clearance by the Ministry of Environment, Forest and Climate Change.

Progress

- The first batch of **three hydrogen-powered heavy-duty trucks** will operate on the **Faridabad–Delhi NCR** and **Ahmedabad–Surat–Vadodara routes**.
 - ♦ To support this transition, Indian Oil Corporation Limited (IOCL) is establishing **hydrogen refueling stations** in Faridabad, Vadodara, Pune, and Balasore.
- **Three major ports** namely **Kandla, Paradip and Tuticorin ports** have been identified by the Ministry of Ports, Shipping and Waterways (MoPSW) to be developed as **Green Hydrogen hubs**.

Concluding remark

- India's success in developing a solar-powered green hydrogen device signals the beginning of a transformative journey toward a decarbonised economy.
- However, translating scientific innovation into large-scale application will require coordinated efforts across policy, industry, and finance.

Source: PIB

NEWS IN SHORT

DIGITAL PAYMENTS AWARD TO INDIA POST PAYMENTS BANK

In News

- India Post Payments Bank (IPPB) received the Digital Payments Award 2024–25 from the Ministry of Finance for its significant role in **promoting digital payments and financial inclusion nationwide**.

India Post Payments Bank (IPPB)

- It is a **100% Government of India-owned entity** under the **Department of Posts, Ministry of Communications**.
- It was launched in **2018**, to provide accessible, affordable, and trusted banking for all.
- It aimed at reaching the unbanked and underbanked and it leverages India's vast postal network of **1.65 lakh post offices** and **3 lakh postal employees**, primarily in rural areas.
- It is built on India Stack and it offers paperless, cashless, and presence-less banking at customers' doorsteps through biometric-enabled smartphones.
- It supports **Digital India by promoting financial inclusion** and a less-cash economy.

Achievements

- India Post Payments Bank (IPPB) is leveraging the vast network of India Post and a tech-driven doorstep banking model.
- It has become a major force in digital banking and financial inclusion.
- India Post Payments Bank (IPPB) achieved 1st Position among Payments Banks in India in the Performance Index for Financial Year 2024–25 & received 'Special Mention' award for the Financial Year 2023-24.

Source: PIB

WORLD SICKLE CELL DAY

In News

- World Sickle Cell Awareness Day, observed recently (on June 19th).
- The theme of World Sickle Cell Day 2025 is, **'Global Action, Local Impact: Empowering Communities for Effective Self-Advocacy'**.

Sickle cell disease

- It is a group of inherited blood disorders caused by a genetic mutation that leads to abnormal haemoglobin in red blood cells.
- This results in red blood cells becoming sickle-shaped, rigid, and sticky, which blocks blood flow and reduces oxygen delivery to organs, causing pain and complications.
- These abnormal cells also break down faster, leading to anemia.
 - ♦ Sickle cell anemia is the most common and severe form of sickle cell disease.

Symptoms

- Sickle cell disease symptoms typically appear in early childhood and vary in severity. Common signs include anaemia, pain crises, swelling in hands and feet, jaundice, delayed growth, and frequent infections.
- **Complications** may include acute chest syndrome, stroke, splenic sequestration, and priapism — all of which can be serious and require urgent care.

Treatment for sickle cell disease

- It focuses on managing symptoms and preventing complications.
- Bone marrow transplants can cure it but are costly and risky.
- Medications like hydroxyurea, pain relievers, blood transfusions, and antibiotics are commonly used.
- Recently, FDA-approved gene editing therapies, such as Casgevy and Lyfgenia, offer new treatment options, with the first patient treated in 2024.

Steps Taken In India

- The National Sickle Cell Anaemia Elimination Mission, launched by Prime Minister Narendra Modi on July 1, 2023, aims to eliminate sickle cell disease as a public health issue in India by 2047.

BUSHEHR PLANT

In News

- Russian nuclear chief Alexei Likhachev stated that the situation at Bushehr nuclear plant is “normal” and controlled.
- Israel claimed it had struck Bushehr, along with other nuclear sites in Isfahan and Natanz.

Bushehr

- It is located in southern Iran along the Persian Gulf and 750 km south of Tehran.
- It is Iran's only operating nuclear power plant and was built by Russia.
- It is the Middle East's first civilian nuclear reactor and holds thousands of kilograms of nuclear material.

Do you know?

- **Natanz:** Iran's main enrichment site is its nuclear facility at Natanz, located on the Central Plateau, around 220 kilometres southeast of Tehran.
 - ♦ The Natanz site is home to two enrichment plants that were operational when Israel began its attacks.
- Iran's nuclear complex at **Isfahan**, located 350 km southeast of Tehran, is home to three Chinese research reactors and labs under the Iranian atomic programme

Source: IE

QR CODES ON ROADS BUILT UNDER PM GRAM SADAK YOJANA

Context

- Recently, the **Union Ministry of Rural Development (MoRD)** asked states to **attach QR codes on all maintenance information display boards** for roads built under the **Prime Minister Gram Sadak Yojana (PMGSY)**.

About

- The aim is to **get public feedback about the quality and maintenance of roads**.
- The citizens' **feedback photos** will be integrated with the **relevant Routine Inspection**.
- **Artificial Intelligence and Machine Learning** will be employed to analyse these photographs to advise on **Performance Evaluation (PE) marks**.
 - ♦ All programs implementing units, while giving PE marks, shall be responsible for checking these photos.

Prime Minister Gram Sadak Yojana (PMGSY)

- **The first phase of the PMGSY** was launched in **2000** to improve **rural infrastructure through road construction**.
- **The second phase** was launched in **2013**. Another component, called the **Road Connectivity**

Project for Left Wing Extremism Affected Areas (RCPLWEA), was launched in **2016** for the construction of rural roads in LWE-affected areas.

- The third phase was launched in **2019**.
- In 2024, the Central government approved **phase IV** to provide **all-weather road connectivity** to:
 - ♦ 25,000 unconnected habitations of population size 500+ in plains,
 - ♦ 250+ in northeastern and hill states/UTs,
 - ♦ special category areas (Tribal Schedule V, Aspirational Districts/Blocks, Desert areas)
 - ♦ and 100+ in LWE-affected areas (notified by the Ministry of Home Affairs in nine states), as per Census 2011.
- **Funding:** Starting as a totally Centrally Sponsored Scheme, the funding pattern was modified **from 2015-16 to 60:40** between the Centre and states (except for northeastern and Himalayan states).
- **Since the scheme was launched**, a total road length of 8,36,850 km has been sanctioned, of which **7,81,209 km has been completed**.
- **A total of 62,500 km of road length** is proposed to be constructed **from 2024-25 to 2028-29**.

Source: IE

INTERNATIONAL DAY OF YOGA

Context

- On the occasion of **International Day of Yoga on June 21, 2025**, the **Archaeological Survey of India**, in collaboration with the Ministry of Ayush, is set to **host Yoga Sessions across 81 centrally protected monuments**.

Do you know ?

- Some of the iconic locations hosting the Yoga Day celebrations includes UNESCO World Heritage Sites such as Charaideo Maidam in Assam, Rani Ki Vav and Dholavira in Gujarat, Hampi and Pattadakal in Karnataka, Khajuraho Group of Monuments and Sanchi Stupa in Madhya Pradesh, Sun Temple at Konark in Odisha, Elephanta Caves in Maharashtra, and the Brihadisvara Temple at Thanjavur in Tamil Nadu.

About

- This year marks the **11th International Day of Yoga**.

- **Theme 2025:** "Yoga for One Earth, One Health", aligning yoga with sustainability and global well-being.
- **The word "Yoga"** is derived from the Sanskrit word 'yuj' meaning **"to join"** or to **unite, symbolizing the union of body and consciousness**.
 - ♦ It is an ancient physical, mental and spiritual practice that originated in India.
- **PM Yoga Awards 2025:** The PM Yoga Awards recognise excellence in promoting and practicing Yoga.
 - ♦ **4 Awards:** 2 National and 2 International.
 - ♦ Each winning individual and organisation **receives ₹25 lakh, a trophy, and a certificate**.

Background of International Day of Yoga

- **On December 11, 2014**, the **United Nations** proclaimed **June 21 as the International Day of Yoga**.
- The draft resolution establishing the International Day of Yoga was **proposed by India and was endorsed by a record 175 member states**.
- The date of **June 21 was chosen as it is the Summer Solstice**, the longest day of the year in the Northern Hemisphere.
 - ♦ This day represents a **symbolic harmony between nature and human wellness** and is important in many cultures.

Source: PIB

TAIWAN STRAIT

Context

- Taiwan detected 50 Chinese military aircraft around the island, days after a British naval vessel sailed through the sensitive Taiwan Strait.

About Taiwan Strait

- **Location:** The Taiwan Strait also known as the **Formosa Strait or the Tai-hai (the Tai Sea)** separates mainland China (Fujian Province) from the island of Taiwan.
 - ♦ It connects the **South China Sea to the East China Sea** and is a vital shipping lane.
 - ♦ It is approximately **180 kilometers** wide at its narrowest point.
- **Geopolitical Tensions:** China views Taiwan as a renegade province and asserts its claim over the island and the strait.



Source: TH

GHARIAL SPECIES CONSERVATION PROGRAMME

Context

- Union Minister for Environment, Forest and Climate Change, launched the Gharial Species Conservation Programme by releasing Gharial hatchlings into the **Gerua River at Katarniaghat Wildlife Sanctuary**, Uttar Pradesh.

About Gharials (*Gavialis Gangeticus*)

- Characteristics:**
 - The name "Gharial" originates from the **Hindi word ghara (pot)**, referring to the **bulbous knob (narial excrescence)** present at the tip of a mature male's snout. Though, this feature is **absent in females**.
 - They show **Sexual Dimorphism** means males and females differ significantly in size and appearance.
 - Unlike other **crocodiles**, gharials feed exclusively on **warm-blooded species** and **are not man-eaters**.
- Habitat Distribution:**
 - Gharials are strictly **riverine species**, requiring **deep, clear**, fast-flowing waters with steep, sandy riverbanks.
 - Mainly found in **Chambal River, Gerua River, Ken River, Yamuna River, Brahmaputra River, Ghaghara River, Bhagirathi-Hoogly River**.
- Conservation Status:**
 - IUCN Status:** Critically Endangered
 - It is listed under **Schedule 1** of the Wild Life (Protection) Act, 1972.

Protected Areas for Gharials

- Katarniaghat Wildlife Sanctuary** : Gerua River (Uttar Pradesh)
- National Chambal Sanctuary** spread across MP, UP, and Rajasthan; a key breeding site.
- Son Gharial Sanctuary:** Madhya Pradesh
- Satkosia Gorge Sanctuary:** Odisha

Conservation Status

- Project Crocodile (1975):** Initiative of United Nations Development Programme (UNDP) and the Food and Agriculture Organization (FAO) and focused on **captive breeding**.
- Gharial Reserves in India:** In Uttar Pradesh, Madhya Pradesh, Rajasthan.
 - Notable protected areas are Chambal Sanctuary, Katarniaghat Wildlife Sanctuary.



Source: AIR

COOK ISLANDS

Context

- New Zealand had suspended millions of dollars in aid to the Cook Islands over concerns about the latter's deepening ties with China.

About the Cook Islands

- Political Status:**
 - A self-governing nation in free association with **New Zealand**. It was formerly a dependent New Zealand colony from **1901 to 1965**.
 - Citizens of the Cook Islands are also citizens of New Zealand.
- Administrative Centre:**
 - Avarua**, located on the island of **Rarotonga**.
- Geography:**
 - Situated in **Polynesia, Oceania**, in the South Pacific Ocean.

- ♦ Located **northeast of New Zealand**, between **American Samoa** and **French Polynesia**.
- ♦ It comprises **15 islands**, formed by **volcanic activity**, with a total land area of approximately **236.7 sq km**.



Source: TH

KING COBRA

Context

- Madhya Pradesh Chief Minister is keen on “reintroducing” king cobras as an antidote to spiralling snakebite deaths and has also proposed a snake census to assess the population of venomous species.

About King Cobras

- **World’s Longest Venomous Snake:** Can grow up to 15 feet in length.
- **Habitat Preference:**
 - ♦ It prefers humid, dark forests with thick undergrowth, cool swamps, and bamboo patches across diverse habitats — from highland evergreen and semi-evergreen forests to estuarine mangroves with high rainfall.
- **Geographical Range: Across the Globe :** It is found widely across South and Southeast Asia, including Nepal’s Terai region, much of India, southern China, the Philippines, Indonesia (up to Sulawesi and Bali), Malaysian Borneo, Brunei, and the Andaman and Nicobar Islands.
 - ♦ **In India: Present:** Western Ghats, North Indian Terai, Northeast India, the mangrove

coastlines of West Bengal and Odisha, Andaman and Nicobar, and parts of the Eastern Ghats.

- **Absent:** No reliable historical record of king cobras in the **dry deciduous forests** of central India (including Madhya Pradesh).

Conservation Status:

- ♦ Listed as “**Vulnerable**” by the **IUCN**
- **Unique Traits:**
 - ♦ **Only snake species** known to build nests for its eggs
 - ♦ **Poor breeders in captivity**, making conservation challenging



Do you know?

- Until recently, king cobras were considered one species, *Ophiophagus hannah*. However, in 2021, a study led by wildlife biologist Gowri Shankar used genetic and morphometric (shape and size) data for “a species delimitation analysis”, which identified four geographically separate lineages.
- These are, from west to east, an endemic Western Ghats lineage; a widespread Asian mainland lineage distributed from northern and eastern India to China and Thailand; and two other lineages distributed in the Malay Peninsula, the Greater Sunda Islands, and the Philippines.

Source: IE

