DAILY CURRENT AFFAIRS ANALYSIS

16 MARCH 2024

1 - Green Hydrogen Utilisation in the Steel Industry:

GS II

Government Policies and Interventions

- **Context:**

- The "Scheme Guidelines for Implementation of Pilot Projects for use of Green Hydrogen in the Steel Sector under the National Green Hydrogen Mission" are guidelines that the Ministry of New and Renewable Energy has released.

- It seeks to substitute green hydrogen and its derivatives for fossil fuels and feedstock derived from them.
- The Plan will be put into effect until FY 2029–2030.

- **Which aspects of the Guidelines stand out the most?**

- **In the steel industry, three areas have been designated as the focus of the pilot projects. These are the following:**

- Utilising Hydrogen in the Production of Direct Reduced Iron
- Hydrogen Utilisation in a Blast Furnace
- gradual replacement of fossil fuels with green hydrogen.
- Pilot projects including any other creative use of hydrogen to lower carbon emissions in the production of iron and steel will also be supported by the programme.

- **Blending Approach:**

- Steel plants are encouraged to begin by blending a modest fraction of green hydrogen in their processes and gradually raise the blending proportion as cost economics improves and technology progresses.

- **Incorporation in New Plants:**

- Upcoming steel facilities are expected to be capable of functioning with green hydrogen to participate in future global low-carbon steel markets.
- The scheme also encourages greenfield projects aiming at 100% green steel.

- **What is Green Hydrogen?**

- Hydrogen is a vital industrial fuel that has a number of applications including the manufacture of ammonia (a key fertilizer), steel, refineries and power.
- Hydrogen is the most plentiful element in the universe. But pure, or the elemental hydrogen, is very scarce. It nearly always exists in compounds like with oxygen to make H2O or water.
- But when electric current is sent through water, it separates it into elemental oxygen and hydrogen by electrolysis. And if the electricity utilised for this process originates from a renewable source like wind or solar then the hydrogen so created is referred to as green hydrogen.
- Colors connected to hydrogen represent the source of electricity utilised to produce the hydrogen molecule. For instance, if coal is utilised, it is referred to as brown hydrogen.

- **Need for Producing Green Hydrogen:**

- Hydrogen is an excellent source of energy because of its high energy content per unit of weight, which is why it is utilised as rocket fuel.
- Green hydrogen, in particular, is one of the cleanest forms of energy, with close to zero emissions. It can be utilised in fuel cells for cars or in energy-guzzling sectors like fertilizers and steel manufacture.
- Countries across the world are focused on increasing green hydrogen capability, as it can assure energy security and also help in decreasing carbon emissions.
- Green hydrogen has become a global phrase, especially as the world is facing its biggest-ever energy crisis and the threat of climate change is developing into a reality.

- **Initiatives Related to Renewable Energy:**

- Jawaharlal Nehru National Solar Mission (JNNSM).
- International Solar Alliance
- PM- KUSUM
- National Wind-Solar Hybrid Policy
- Rooftop Solar Scheme

- **What are the Challenges in Adopting Green Hydrogen in Steel Plants?**

- **Technological Adaptation:**

- Transitioning from traditional steelmaking techniques to hydrogen-based methods needs significant technological adaptation. Existing steel facilities may need to undergo major changes or possibly total redesign to handle hydrogen as a principal reducing agent.

- **Infrastructure Requirements:**

- The generation, storage, and transportation of hydrogen necessitate major infrastructural development. Establishing hydrogen production facilities, storage tanks, and distribution networks adds complexity and cost to steel factory operations.

- **Cost Implications:**

- Adopting hydrogen-based processes may incur higher initial capital expenditures compared to conventional approaches. Investment in new equipment, infrastructure, and technology, as well as ongoing operational expenses, can offer financial hurdles for steel manufacturers, especially in the face of unpredictable market conditions.
- **Supply Chain Constraints:**

- Ensuring a stable supply chain of hydrogen, including obtaining raw materials and maintaining regular production levels, is critical for ongoing steel mill operations. Dependence on external suppliers and potential supply chain disruptions may cause logistical issues.

- **Carbon Capture and Storage (CCS):**

- Although hydrogen-based steel manufacturing has the potential for large carbon emissions reductions, capturing and storing CO2 emissions created during the process remains a difficulty.
- Developing cost-effective CCS systems compatible with steel mill operations is crucial for achieving net-zero emissions targets.

- **What are the Efforts to Promote Green Steel Production?**

- **International Collaborations:**

- At the 28th Conference of Parties to the United Nations Framework Convention on Climate Change, India announced its partnership with Sweden under the LEAD-IT programme which had a focus on industrial Decarbonisation, specifically the steel sector.
- Swedish business SSAB was the first globally to make steel with hydrogen back in 2018.
- Yet another Swedish startup, H2-Green Steel, is likewise expecting to roll out its first batch of green steel utilising hydrogen by 2025.
- Similar attempts are being pursued by Nippon Steel in Japan and other competitors in France and Germany.

- **Domestic Companies:**

- Domestically, firms like Tata Steel and ArcelorMittal Nippon Steel India have been exploring initiatives towards using hydrogen.

- In January 2024, ArcelorMittal Nippon Steel India signed a memorandum of understanding (MoU) with the Maharashtra government, intending to develop a 6 million tonnes per annum green steel plant in Maharashtra that proposes to use hydrogen instead of coal.

- **Government Schemes:**

- **Perform, Achieve and Trade (PAT) Scheme:**

- PAT Scheme incentivizes the steel sector to reduce energy use.
- Pradhan Mantri Urja Ganga Project to promote the manufacturing of Green steel.

- **Steel Scrap Recycling Policy, 2019:**

- Steel Scrap Recycling Policy, 2019 boosts the availability of locally generated scrap to reduce the usage of coal in steel manufacturing.

- **The Way Ahead:**

- Develop Supportive Policies and laws: India needs to develop a complete and cohesive policy framework for green hydrogen, such as defining targets, giving incentives, creating standards, and enforcing laws. India may also learn from the finest practices and experiences of other countries, such as Germany, France, and Sweden.
- Implement Pilot Projects and Scale-up: India needs to implement pilot projects using green hydrogen in steel plants, such as blending hydrogen with natural gas or coal, using hydrogen in the direct reduction ironmaking process, and using hydrogen in blast furnaces.
- These initiatives can assist illustrate the feasibility, viability, and benefits of green hydrogen, as well as reveal the obstacles and gaps.
- Based on the learnings and outcomes of these programmes, India can scale up the deployment of green hydrogen in steel plants.
- enhance Investment and Collaboration: India needs to enhance public and private investment in green hydrogen projects, as well as develop collaboration among many stakeholders, such as government, business, academia, and civil society. India can also exploit international collaborations and efforts, such as the International Solar Alliance and Mission Innovation.
- Enhance R&D and Innovation: India needs to enhance its R&D and innovation skills in the field of green hydrogen, such as establishing specialised centers of excellence, supporting startups and entrepreneurs, and facilitating technological transfer and diffusion.

Source → The Hindu

2 - Northern Ireland Conflict:

GS II

International issues

- **Context:**

- Recently, a pro-Irish unity leader made history by becoming the first Nationalist First Minister of Northern Ireland amid parliamentary impasse reflecting the region's deep differences.
- Rooted in its tumultuous past, the move suggests a potential movement towards reconciliation and inclusive governance.

- **How did Northern Ireland Come into Being?**

- Northern Ireland was the site of a 30-year civil conflict (1968-1998) known as 'The Troubles' between the Republicans and the Unionists, which murdered over 3,500 people.
- It also had a religious tinge to it with the Republicans being predominantly Catholic and the Unionists being largely Protestants.
- Northern Ireland was historically part of the Ulster province, which sits to the north of modern-day Ireland.

- **Conflict Between Protestants and the Irish Catholics:**

- Conflict between the Protestants and the Irish Catholics extends all the way back to 1609, when King James I initiated an official policy of migration wherein people from England and Scotland were encouraged to travel to Ulster to work in his many plantations there.
- The religious conflict that was being waged in much of Europe at the time, between the Protestants and the Catholics, made its influence felt in Ulster as well.
- However, a much stronger resistance was forming. Ireland at the time was under the control of England.

- **Resistance Against the Colonial English Rule:**

- The growing struggle to colonial English control, notably after the Potato Famine of 1845 where over 1 million Irish people died due to disease and starvation, reinforced these sectarian and religious distinctions.
- Finally, in 1916, in the middle of the First World War, during Easter week, Ireland rose out in arms against colonial rule under the leadership of the Irish Republican Army (IRA).

- **Forming of Northern Ireland:**

- After a long conflict, it was able to gain independence from England with the Anglo-Irish treaty of 1921.
- However, Ireland was separated into two territories. As there being a protestant majority in Ulster, out of the 32 counties in Ireland, six remained with the U.K, constituting the region of Northern Ireland.

- **What is the Background of Political Deadlock in Northern Ireland?**

- The political standstill in Northern Ireland came from the disagreement over the establishment of border restrictions between Britain and the Island of Ireland following Brexit.
- When the United Kingdom left the European Union, Northern Ireland, as part of the UK, became the sole province with a land border with an EU member state, the Republic of Ireland.
- To address this issue, the UK and the EU created the Northern Ireland Protocol as part of the Brexit accord. This protocol attempted to prevent the restoration of a hard border between Northern Ireland and the Republic of Ireland by relocating the trade border to Irish ports, essentially creating a sea border between Northern Ireland and the rest of the UK.
- However, this arrangement proved difficult, notably for the Democratic Unionist Party (DUP), which opposed to what it perceived as eroding Northern Ireland's place within the UK and breaking the principles of the Good Friday Agreement.
- The DUP's objection to the Northern Ireland Protocol led to their withdrawal from the power-sharing government, as they believed the protocol threatened Northern Ireland's position within the UK and violated the principles of the Good Friday Agreement, which emphasised free movement of goods and people across borders.
- Ultimately, the settlement of the standoff occurred through a renegotiation of the border restrictions and assurances regarding Northern Ireland's future within the UK, leading to the DUP's consent to return to government.

- **What is the Good Friday Agreement?**

- The Good Friday Agreement, also known as the Belfast Agreement, is a historic peace pact signed on 10th April, 1998, in Northern Ireland.
- It attempted to bring an end to the violence and warfare that had afflicted the region for decades, particularly during the time known as "The Troubles."

- **Key Provisions:**

- Power Sharing: The agreement established a devolved government in Northern Ireland, with power divided between Unionists (who generally want Northern Ireland to stay part of the United Kingdom) and Republicans (who generally seek reunification with Ireland). This power-sharing model was meant to ensure that both groups have a say in running Northern Ireland.

- Consent concept: It accepted the concept of consent, meaning that the status of Northern Ireland would not alter without the permission of a majority of its people. This provision provided for the potential of reunification with Ireland through a referendum, but only if the majority of people in Northern Ireland voted for it.
- Human Rights: The agreement underlined the importance of human rights and equality for all citizens of Northern Ireland, regardless of their background or political convictions.
- Decommissioning of Weapons: While the agreement did not specifically require the immediate disarmament of paramilitary groups, it set out a framework for the decommissioning of weapons possessed by such groups. This process was expected to take place in parallel with the implementation of other provisions of the agreement.
- Cross-Border Cooperation: The agreement encouraged cooperation and reconciliation between Northern Ireland and the Republic of Ireland, as well as between the UK and Ireland more broadly. It promoted economic, social, and cultural relations across the border, while simultaneously recognizing the sovereignty and territorial integrity of both states.

- **What are the Key Facts About Northern Ireland?**

- Location and Geography: Northern Ireland is situated in the northeastern corner of the island of Ireland. It shares boundaries with the Republic of Ireland to the south and west, while the Irish Sea separates it from England and Wales to the east and southeast, and the North Channel separates it from Scotland to the northeast.
- Political Status: Northern Ireland is a component country of the United Kingdom, with England, Scotland, and Wales. It is not a sovereign state but has its own devolved administration within the framework of the United Kingdom.
- Capital and Major Cities: The capital city of Northern Ireland is Belfast, a modern metropolis with a significant industrial past, including shipbuilding. Other important cities are Londonderry (sometimes known as Derry) and Armagh.
- Cultural Contributions: Northern Ireland has made important contributions to world culture, particularly in literature, music, and the arts. Notable personalities include poet Seamus Heaney and musician Van Morrison.
- Economy: Historically focused on sectors such as shipbuilding and textiles, Northern Ireland's economy has diversified in recent decades, with a concentration on technology, tourism, and services.
- Demographics: The population of Northern Ireland is diverse, with a variety of nationalities, faiths, and cultural backgrounds. The region's population is largely Christian, with significant Protestant and Catholic congregations.

- The success of the Good Friday Agreement will depend on the willingness of all stakeholders to overcome barriers, embrace diversity, and establish a common future built in mutual respect and understanding. Only through continuous commitment to peace and reconciliation will Northern Ireland fully fulfil its potential as a community that cherishes its unique cultural history while forging a single path towards prosperity and togetherness.

Source → The Hindu

3 - Tripling Renewables by 2030:

GS III

Environmental Conservation related issues

- **Context:**

- Recently, a report has been published by Think-Tank Climate Analytics titled-Tripling renewables by 2030: Interpreting the global goal at the regional level, which breaks down what a 1.5ºC-aligned Renewables rollout would look like at the regional level and calculates the associated investment needs.

- At COP (Conference of Parties) 28, governments committed to treble global renewable capacity by 2030. This, with tripling energy efficiency, is arguably the most powerful move the world can take in the transition away from fossil fuels this critical decade.

- **What are the Key Highlights of the Report?**

- **Tripling Renewables for 1.5°C Target:**

- To coincide with the 1.5°C objective stated in the Paris Agreement, global renewable capacity has to expand to 11.5 TW by 2030, which is 3.4 times greater than 2022 levels.
- To do this, different regions scale at different rates relative to their current renewable capacity, determined by the pace of fossil phase-out needed and anticipated energy demand growth.

- **Regional Contributions:**

- Asian Region: Asia contributes the highest total contribution, delivering approximately half (47%) of the 8.1 TW of renewable capacity increases needed globally by 2030.
- Asia is the only region that is substantially on schedule to triple renewables in line with 1.5ºC by 2030.
- This is mostly driven by expansion in China and India which compensates for laggards like South Korea, where renewable capacity is forecast to rise at half the rate of the area as a whole.
- However, the rush of coal-fired power plant construction in China and India is a significant problem. If this continues, it will either endanger a 1.5ºC-aligned power sector transition or produce large-scale stranded assets.

- OECD: The OECD (Organisation for Economic Co-operation and Development) contributes the second highest proportion of global capacity additions at roughly a third (36%).
- Renewables in the region scale at a slower rate of 3.1x due to lower energy demand growth and a larger level of current renewable capacity installed in 2022.
- Sub-Saharan Africa: Sub-Saharan Africa scales quite quickly at 6.6x due to low levels of existing renewable capacity and significant energy access needs.
- Electricity demand is predicted to climb 66% per capita between 2020-2030 in the region, resulting in a renewables scale up rate that is double the global average.
- Achieving such a quick renewables deployment in Sub-Saharan Africa would require greatly upscaled international climate finance.

- **Investment Requirements:**

- Achieving the 1.5°C-aligned target requires USD 12 trillion of investment in the power sector by 2030, with an average of USD 2 trillion per year from 2024 onwards.
- Two-thirds of this expenditure would be devoted to renewable installations, while the remainder would be for grid and storage infrastructure.

- **Investment Gap and Potential Solutions:**

- There exists a huge investment gap, with the globe likely to invest USD 5 trillion less than required over 2024-2030.
- Shifting investments from fossil fuels to renewables and networks may cover this gap altogether, aligning the power industry with the 1.5°C objective.

- **Challenges and Urgency:**

- Sub-Saharan Africa confronts enormous obstacles due to a lack of investment and international support, risking millions missing out on the benefits of renewable energy.
- Urgent action is needed to mobilise funding and promote renewables development in less rich regions to guarantee the COP28 goal is achieved.

- **Policy Recommendations:**

- In addition to scaling up renewables, governments must remove public support and subsidies for fossil fuels to successfully cut emissions.
- To lead efforts towards the goal, governments require a clear roadmap and information on investment and climate finance needs, while civil society needs benchmarks to hold governments to account.

- **What are the Indian Initiatives towards Clean Energy Transition?**

- India has expressed a commitment to sustainable energy with lofty targets including 500GW of non-fossil, including 450 GW Renewable Energy (RE) capacity increase and 43% RE purchasing obligation by 2030.
- These aims are supported through complementary policy and legislative mandates (Energy Conservation (Amendment) Act), missions (National Green Hydrogen Mission), fiscal incentives (production-linked incentives) and market mechanisms (upcoming national carbon market).

- **Net Zero Target:**

- India has set itself an ambitious long-term goal of reaching net zero emissions by 2070.
- In August 2022, India amended its Nationally Determined Contributions (NDC) under the Paris Agreement to reflect its target of obtaining 50% cumulative electric power installed capacity from non-fossil fuel based energy sources by 2030.

- **Energy Conservation Amendment Bill, 2022:**

- In August 2022, the Lok Sabha enacted the Energy Conservation Amendment Bill, 2022 which aims to require the use of non-fossil fuel sources such green hydrogen, green ammonia, biomass and ethanol for energy and feedstock in industry.
- The Bill also gives the power to the Central Government to establish carbon markets.

Source → The Hindu

4 - RBI Imposes Restrictions on Paytm Payments Bank:

GS III

Indian Economy

- **Context:**

- Recently, the Reserve Bank of India (RBI) has imposed tight limitations on Paytm Payments Bank Ltd (PPBL). This move comes after an audit report showed recurring non-compliances and supervisory issues within the bank.

- **What are the Key Restrictions Imposed on PPBL?**

- Background: Section 35A of the Banking Regulation Act, 1949, confers authority upon the RBI to issue directives to banks and undertake necessary actions to prevent the operations of any banking entity from being conducted in a manner detrimental to the interests of depositors or prejudicial to the bank's own interests.
- In this case, sources say worries over fraudulent transactions involving considerable quantities of money between Paytm and its affiliated banking institution spurred the RBI to take action against the business.
- PPBL apparently had numerous non-compliant accounts without sufficient KYC verification, including thousands of instances where a single PAN was used to register multiple accounts.
- Additionally, transactions exceeding regulatory restrictions in minimum KYC prepaid instruments triggered red flags about suspected money laundering activities.

- **Key Restrictions:**

- Deposit Bar: PPBL is restricted from receiving further deposits, top-ups, or credit transactions into its accounts or wallets from 29th February, 2024.
- This also applies to its prepaid instruments for FASTags and National Common Mobility Cards (NCMC) cards.
- Service Limitations: The ban extends to financial services such as Aadhaar Enabled Payment System, Immediate Payment Service, bill payments, and UPI transactions.
- The bank must settle all pipeline and nodal account transactions by 29th March, with no further transactions permitted afterward.
- Closure of Nodal Accounts: PPBL is directed to delete nodal accounts of its parent business and Paytm Payments Services by 29th February, 2024.

- Nodal accounts function as specialized bank accounts established by enterprises, acting as financial middlemen.
- These accounts are designed to keep monies collected from participating banks on behalf of consumers, with the primary goal of later transferring these funds to certain merchants.

- **What are Payment Banks?**

- Payment banks are a specialist form of bank launched by the RBI in 2014. They are aimed to promote financial inclusion by giving basic banking services to the unbanked and underbanked population.
- They were introduced on the suggestions of the Nachiket Mor committee set up by the RBI to study financial services for small companies and low-income households.
- Example: Airtel Payments Bank, India Post Payments Bank, etc.

- Licensing Requirements: They are licenced under Section 22 (1) of the Banking Regulation Act, 1949
- They belong under the differentiated bank licencing category of RBI as they are barred from giving the entire range of services provided by commercial banks.
- RBI grants two types of banking licenses: universal bank licenses and specialised bank licenses.

- **Features:**

- Reserve Requirements: They are required to maintain the Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR).
- Minimum 75% of its demand deposit balances in Statutory Liquidity Ratio qualifying G-securities/ T-bills with maturity up to one year.
- Maximum 25% in current and time/ term deposits with other scheduled commercial banks apart from maintaining CRR requirements
- Minimum Paid-up Capital: The minimum paid-up equity capital has been determined at Rs 100 crore.
- The promoter's minimum initial commitment to the paid-up equity capital shall be at least 40% for the first 5 years.
- barred Services: They are barred from performing loan operations or issuing credit cards.
- Therefore, they are also immune from priority sector lending requirements that generally apply to traditional banks.
- Rural Outreach Requirements: At least 25% of a Payments Bank's physical access points needs to be in rural centers.

- **Major Activities Performed by Payment Banks:**

- Accepting deposits from individuals and small businesses, up to a certain limit (currently set at Rs 2 lakh per account).
- Providing remittance services, and simplifying domestic money transfers.
- Issuing ATM/debit cards, prepaid payment instruments, and other electronic payment methods.
- Offering internet banking services, including online fund transfers and bill payments.

Source → The Hindu