DAILY CURRENT AFFAIRS

28th April 2025

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Clean AI

Why in News?

- Environmental and Economic Impact of AI

Syllabus

- **GS Paper 3** – Science & Technology

Clean AI

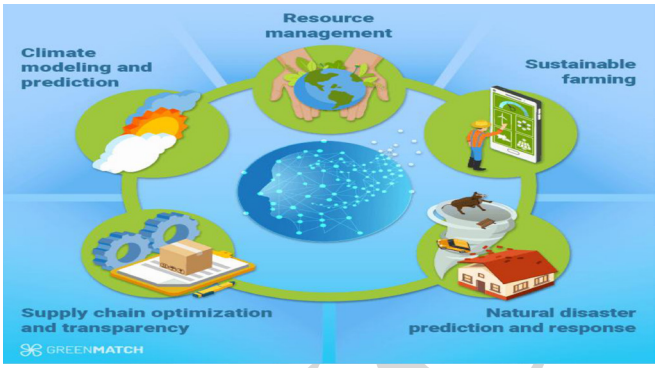
India must stay the course of powering AI technology sustainably

The International Monetary Fund's report that pointed to the likelihood of the economic gains of Artificial Intelligence (AI) applications outweighing the environmental costs of the increased energy demand that AI data centres will require is reassuring. It underscores that this transformational technology is not fundamentally at odds with the global imperative to pursue sustainable growth strategies across the board. Countries that are better prepared with renewable energy generation are bound to see a lower social and environmental cost to pursuing their AI ambitions. India's AI infrastructure – at least the part of it that the government is indirectly funding through the IndiaAI Mission – does not rise to the level of weighing at a macro level on the nation's energy mix. Still, the need for pursuing renewables specifically for AI is necessary to follow. This is already in a sense the government's approach to the issue, outlined at the AI Action Summit in Paris earlier this year. While AI is not the sole industry where a push for renewable energy and sustainable practices is important, the sector nevertheless offers itself up for two main reasons. The first is the sheer volume of electricity that it is set to consume. The IMF's report indicates that in the United States – the single largest home for AI computing capacity globally – "AI expansion alone could increase electricity prices by up to 9 percent, adding to price pressures coming from many other sources". As such, renewable energy could play a major role in cushioning against a multifold rise in emissions that conventional energy sources would likely entail. The second is that data centres lend themselves uniquely to captive renewable infrastructure. Some Indian firms have already made moves to purchase renewable energy, and the hundreds of acres that data centres occupy are ripe for complementing equipment with solar cells. Nuclear energy may also turn out to be a welcome contribution: small modular reactors at emerging data centre clusters, in conjunction with other renewable sources, would avert a sizeable quantity of emissions.

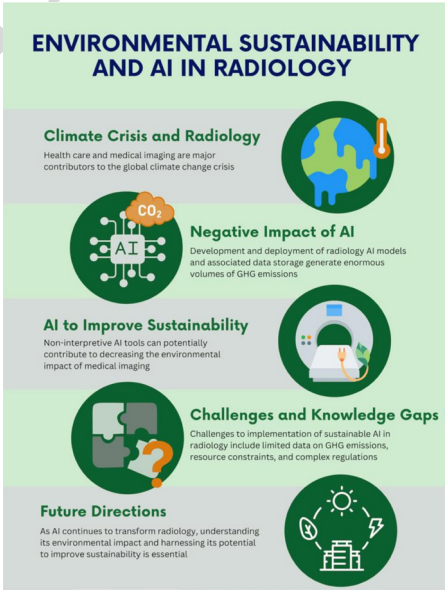
Electricity use is not the only environmental footprint that the AI age will leave behind – the technology requires large-scale mining of minerals and water use, and produces effluents in the manufacturing of the electronics supply chain. As electronics manufacturing is another space that India aspires to grow in, these opportunities must be pursued in this area too. India's net zero target for 2070 will demand a scaling down of conventional sources of emissions, and managing the rise of industries that are poised to expand their share of global energy consumption.

Key Takeaways from the Article

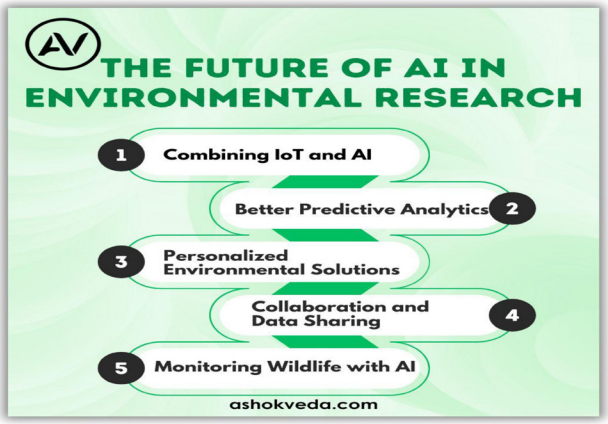
- **AI and Environmental Sustainability:**
  - The IMF report highlights that the **economic benefits of AI** could outweigh the **environmental costs.**
  - **AI data centers,** which are key to the development of AI technology, are expected to increase global electricity demand, with potential price hikes.
  - **India's AI infrastructure**, funded indirectly through the **IndiaAI Mission** - but there is a strong push for integrating **renewable energy.**



- **Role of Renewable Energy:**
  - Renewable energy **can help offset emissions** and mitigate the rising electricity prices caused by AI data center operations.
  - Data centers can be paired with renewable infrastructure, such as **solar cells**, to further reduce energy consumption and emissions.
- **Additional Environmental Footprint of AI:**
  - AI also requires large-scale **mineral mining, water usage, and generates effluents**, particularly in electronics manufacturing.
  - India, with ambitions to grow its electronics manufacturing, must consider the **environmental impact** in this sector, ensuring that the benefits **do not come** at the cost of unsustainable practices.



- **Policy Alignment with India's Net Zero Target:**
  - India has set a **net zero emissions target by 2070**, making it imperative to reduce emissions from conventional energy sources.
  - The **expansion of AI and tech industries** must be balanced with India's environmental goals, ensuring that **sustainable practices** are adopted across these sectors.



The real Indian arbitrator needs to stand up

Why in News?

▪ Arbitration and Governance Reforms

Syllabus

▪ **GS Paper 2** – Indian Polity & Governance

The real Indian arbitrator needs to stand up

India's economic rise has, unsurprisingly, triggered many conversations about the potential of Indian arbitration as a significant contributor to the growth. An increase in domestic and cross-border commerce has made the occurrence of commercial disputes inevitable. The Indian court-litigation machinery remains overburdened and inadequately equipped to efficiently decide and dispose of these disputes, which are often time-sensitive, technical in nature, and entail large monetary sums. Resultantly, the mechanism of commercial arbitration, especially under the auspices of specialised arbitral institutions, becomes a popular solution. However the question that arises is this: is the Indian arbitration ecosystem living up to its perceived popularity? Is India truly on course to become a global hub of arbitration? While discussions routinely focus on legislative reforms or minimisation of judicial intervention, the most significant stakeholders of Indian arbitration, i.e., the arbitrators, escape scrutiny.

The subject of human capital

The success of any legal mechanism is defined not only by its theoretical framework but also by its human capital. For Indian arbitration, this human capital comprises the community of arbitration lawyers, but perhaps, more importantly, arbitrators who function as its decision-makers.

The credibility and the legitimacy of Indian arbitration is primarily defined by two parameters: first, the efficient conduct of arbitral proceedings, and second, the quality of arbitral awards. In both contexts, arbitrators literally play a decisive role. While arbitration lawyers are instrumental to the conduct of any proceeding, it is the arbitrators who have the power to dictate the arbitration's procedural framework, finalise timelines, determine procedural quibbles, and impose monetary sanctions in case either party's conduct is found lacking.

Likewise, it is their awards that can be challenged before a competent court in India or abroad. Thus, the Indian arbitrator is very much at the heart of the country's arbitration ecosystem.

Arun Chawla
is Director General, Indian Council of Arbitration

Conversations about Indian arbitration rarely focus on the need to develop the elite Indian arbitrator

An exclusion

Nevertheless, conversations about Indian arbitration rarely focus on the need to develop the elite Indian arbitrator. While initiatives to augment the Indian arbitration bar are omnipresent, no similar enthusiasm exists in relation to the arbitration bench. This is unfortunate. In March 2024, the former Chief Justice of India, Justice D.Y. Chandrachud, had questioned why Indian arbitrators are not appointed in international disputes having no domestic element. His observation was not without basis. Barring the odd-exception, Indian arbitrators are absent from the informal community of repeatedly-appointed elite international arbitrators. What contributes to their exclusion?

The fundamental reason for the aforementioned paradigm is the identification of an elite Indian arbitrator with that of a retired Supreme Court or High Court judge. It is well-known that Indian courts prefer to appoint former judges as arbitrators, especially in high-value disputes. Over the years, this tendency has impacted the appointment practices of litigants, lawyers, and arbitral institutions. It is safely assumed that the judicial training and experience of a former judge will naturally translate into the efficient conduct of arbitral proceedings and higher quality of awards. However, as the Ministry of Finance's guidelines published in June 2024 show, the reality is vastly different. The Ministry painted a disappointing picture of lengthy and expensive arbitral proceedings that mimic court-procedures, resulting in poorly reasoned awards that are frequently challenged and set-aside.

Accordingly, the assumption that professionals with legal and judicial training do not require further capacity-building to become elite arbitrators requires correction. The judicial mind is a valuable asset, but is insufficient by itself in the realm of arbitration. A capable arbitrator wears several hats. He must not only be legally proficient but also a capable manager of the dispute resolution process who can blend procedural certainty with flexibility and innovation. This requires going beyond the rigid frameworks of civil procedure and evidentiary laws in India, and instead adopting global best-practices unique to international arbitration.

Arbitrators also often serve as part of a tribunal with members from diverse nationalities and cultures. Their internal deliberations, in which each arbitrator has to convince their colleagues of their viewpoint, are decisive. Engaging in these deliberations requires soft-skills whose existence cannot be taken for granted and often requires special training.

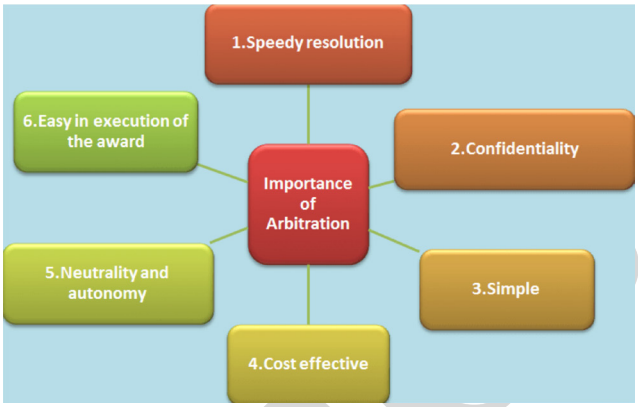
Finally, there are important differences between writing a judgment as an appellate judge of a common-law court and the drafting of an arbitral award. The second requires a meticulous examination of voluminous documentary evidence and testimonies of fact and expert witnesses, and intricate financial analysis to quantify any compensation or damages.

The improvements needed

Accordingly, the ecosystem of Indian arbitration requires at least two improvements. First, the pool of Indian arbitrators must be diversified to include candidates specialising in arbitration. The pool should not be restricted to advocates and retired judicial officers, but include trained experts from various fields who can bring a range of nuanced perspectives to decision-making. Second, each candidate, irrespective of their background, must undergo a rigorous training and accreditation process, such as through specialised certificate courses and workshops organised by arbitral institutions or membership of professional arbitration associations. The aim is to not only upskill but also create a culture in which arbitration is not perceived as a neglected-sibling of court-litigation. Only then could the real, elite Indian arbitrator rise to occupy their rightful place in the global arbitration community.

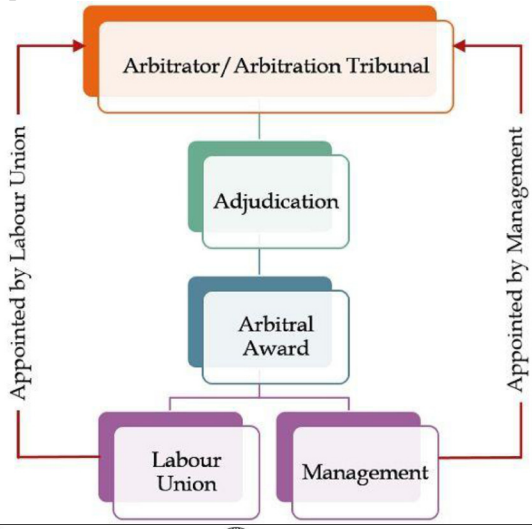
Key Takeaways from the Article

- **India's Growing Arbitration Ecosystem:**
  - India's increasing economic activity has led to a rise in **domestic and cross-border commercial disputes**, creating a demand for an **efficient arbitration mechanism**.
  - India's court system is overwhelmed, leading to arbitration as an attractive alternative, especially in resolving **technical, time-sensitive, and highstakes disputes.**

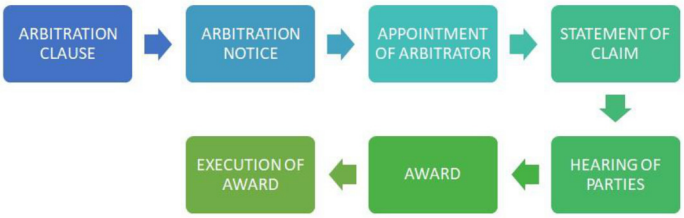


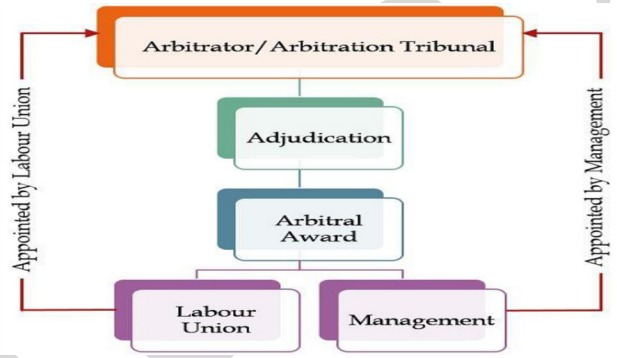
- **Role of Arbitrators in India's Arbitration Ecosystem:**
  - The quality and efficiency of arbitration proceedings depend significantly on the arbitrators who set the **procedural framework, manage timelines, and deliver final rulings.**
  - Arbitrators are also responsible for drafting arbitral awards, which can be contested in courts **both domestically and internationally.**

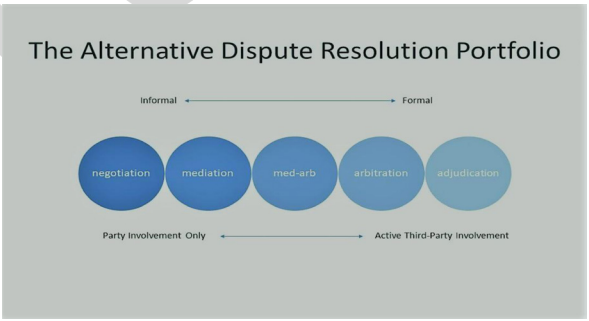
- **Exclusion of Indian Arbitrators from Global Arbitration:**
  - The article emphasises the **absence of Indian arbitrators** in international commercial disputes, particularly those without a domestic connection.
  - Despite a strong judiciary background, **Indian arbitrators are rarely appointed** as elite international arbitrators due to a lack of diversity in the pool and training.



- **Over-reliance on Retired Judges:**
  - India predominantly appoints retired judges from the **Supreme Court or High Courts** to handle major arbitration cases, believing their judicial training will naturally extend to arbitration proceedings.
- **Need for Specialised Training:**
  - The article stresses that being a judge is **not enough** to make one a good arbitrator.
  - Effective arbitrators must possess a mix of **legal expertise, managerial skills**, and the **ability to understand** and apply international best practices.
  - They must also be equipped with the **ability to collaborate and deliberate in diverse international teams**, requiring soft skills.
- **Recommendations for Improvement:**
  - Diversification of Arbitrator Pool
  - Rigorous Training and Accreditation
  - Reform of Arbitration Culture







ISRO – Semicryogenic Engine & NISAR Satellite

- ISRO successfully conducted its **second short-duration hot test of the semicryogenic engine.**
- The test focused on validating subsystems like the **low-pressure and high-pressure turbo pumps, pre-burner, and associated control systems.**

ISRO's second short hot test of semicryogenic engine a success

The Hindu Bureau
BENGALURU

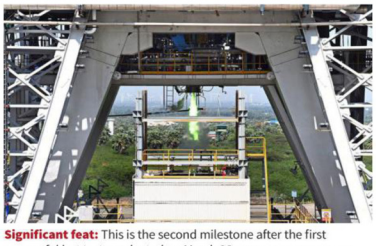
The Indian Space Research Organisation (ISRO) has successfully conducted a short duration hot test of the semicryogenic engine at its facility in the ISRO Propulsion Complex (IPRC), Mahendragiri.

This ignition test, conducted on April 24, is the second milestone after the first successful hot test on March 28, which was a major breakthrough in the semicryogenic engine test programme.

In this test, the Engine Power Head Test Article, encompassing all engine systems except the thrust chamber, was subjected to a hot test for a duration of 3.5 seconds that validated the engine start-up sequence. During the test, the engine was successfully ignited and operated up to 60% of its rated power level, demonstrating stable and controlled performance.

"These tests are part of a planned series of evaluations designed to validate the design integrity and performance of critical subsystems, including the low-pressure and high-pressure turbo pumps, pre-burner and associated control systems. The results provided crucial data to finalise the operational sequencing of the full semicryogenic engine," the ISRO said.

Further qualification tests are scheduled to comprehensively validate the engine system, ultimately paving the way for its induction into ISRO's launch vehicles.



Significant feat: This is the second milestone after the first successful hot test conducted on March 28. SPECIAL ARRANGEMENT

Meanwhile, the launch campaign activities for NASA-ISRO Synthetic Aperture Radar (NISAR) satellite onboard the GSLV-F16 have already commenced in Sriharikota, the ISRO said.

The Second Stage (GS2) of the ISRO's GSLV launch vehicle was flagged off by V. Narayanan, Secretary, Department of Space, and Chairman, ISRO, on March 24, from the ISRO Propulsion Complex (IPRC), Mahendragiri, to the launch complex at Sriharikota.

"The Directors of ISRO Propulsion Complex (IPRC) and Vikram Sarabhai Space Centre (VSSC) also participated in the flag-off ceremony. This liquid stage is earmarked for the upcoming mission of GSLV (GSLV-F16), that will launch the NASA-ISRO Synthetic Aperture Radar (NISAR) satellite," ISRO said.

- ISRO has commenced the launch campaign for the **NASA-ISRO Synthetic Aperture Radar (NISAR)** satellite, which will be launched onboard the **GSLV-F16.**