

The Hindu Important News Articles For UPSC CSE

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Page 05:GS III :Environment/ Preliminary Examination

Recently, the World Bank Group (WBG) has signaled the end of its mandatory 45% funding target for climate-focused projects, which was set under its 'Climate Change Action Plan' (CCAP). This policy shift by the World Bank comes after pressure from its largest shareholder, the United States (U.S.). The Bank states that it will now focus on 'outcomes' (the actual impact of development) rather than 'inputs' (how much money was spent). This decision could particularly affect ongoing environmental and infrastructure projects in developing countries like India.

World Bank may scrap funding target for climate projects

Jacob Koshy
NEW DELHI

Following disapproval from the U.S. administration, the World Bank Group (WBG) has indicated that it would do away with its funding target for climate-centric projects.

"We will complete our shift from inputs to outcomes to maximise development impact. We will retire the 45% climate co-benefits target and the 35% target in the Climate Change Action Plan (CCAP). We have done significant work in answering client demand and needs," the World Bank said in its June 29 statement on its CCAP.

Possible impact
Launched in 2020 and over a five-year period ending 2026, the CCAP mandated the WBG to allocate 35% of its total financing for projects that reduced emissions or helped communities adapt to climate change. The goal was increased to 45% in 2023.

The latest announcement by the World Bank may impact projects in developing countries.

In India, the World Bank's climate-focused projects include electrified freight rail and inland waterways to cut transport emissions; forest restoration and biodiversity conservation in Madhya Pradesh and Meghalaya; climate-resilient agriculture for smallholders; rehabilitation of ageing large dams; community-led groundwater management under Atal Bhujal Yojana; mangrove restoration along both coasts; flood forecasting and embankment strengthening in Bihar's Kosi basin; solar parks and rooftop solar systems; green hydrogen for hard-to-abate industries; battery storage paired with renewables in Chhattisgarh; Kerala's post-2018-flood resilience overhaul; and the "One Health" livestock disease programme guarding against zoonotic spillover.

The *Hindu* has reached out to the World Bank spokesperson, asking whether the latest development would impact India-based projects. The spokesperson has not responded so far.

'Continued support'
The World Bank has said it would continue to support countries in their national plans and meeting their Nationally Determined Contributions. While the CCAP would continue, an independent evaluation group would appraise it.

"We will continue to track and report on our two scorecard indicators on (i) net greenhouse gas emissions and (ii) beneficiaries with enhanced resilience to climate risks...We will continue to report to the Board on progress, including on climate co-benefits," the statement added.

U.S. criticism
In April, the U.S. — the WBG's largest shareholder — expressed its strong disapproval at the CCAP funding target. "The World Bank must maintain focus on its core mission of reducing poverty and increasing economic growth... It also means jettisoning the Group's 45% climate finance target that breeds inefficiency, distorts economic decision-making, and moves the Bank away from its core mission. At the same time, we expect greater efficiency, discipline, and accountability so that every dollar delivers more impact," said U.S. Treasury Secretary Scott Bessent.

U.S. President Donald Trump, who has labelled climate change a "con job", has withdrawn the country from the Paris Agreement, the 2015 pledge that binds countries to reduce greenhouse gas emissions in a way that it leads to global temperature not exceeding two degrees Celsius over the pre-Industrial Age temperature, by 2100.

Much of the subsequent climate action and the global thrust to shield against ongoing damage from climate change — including the World Bank's — draws from this principle. Despite the global move towards renewable energy sources, developing countries say they have yet to receive adequate financial support from developed countries — despite commitments — to accelerate the transition.

"The promise to mobilise \$300 billion a year for developing countries depends on strong multilateral development banks. If the World Bank steps back, that promise becomes much harder to deliver," said Mattias Söderberg, of non-profit, DanChurchAid.



Policy shift: World Bank's climate-focused projects in India include those aimed at cutting transport emissions. SUSHIL KUMAR VERMA

Key Points & Analysis

1. Background of the Policy Shift

- **Beginning of the Target:** The World Bank launched its five-year Climate Change Action Plan (2020-2026) in 2020, under which 35% of total financing was reserved for climate projects. This target was increased to 45% in 2023.
- **Reason for the Change:** Following strong objections from the U.S. administration, the Bank has decided to retire this "Climate Co-benefits Target".
- **The World Bank's New Argument:** The Bank believes that this change will allow them to meet the actual demands and development needs of client countries with greater flexibility.

2. U.S. Criticism and Stance

- **Deviation from Core Mission:** According to U.S. Treasury Secretary Scott Bessent, a fixed 45% climate financing target promotes inefficiency and distorts economic decision-making. The U.S. believes the Bank should remain focused on its core mission—poverty reduction and promoting economic growth.

Daily News Analysis

- **Impact of U.S. Geopolitics:** Following U.S. President Donald Trump expressing skepticism about climate change and moving to withdraw the U.S. from the 'Paris Agreement' once again, pressure has increased on multilateral development banks (MDBs) to reduce climate priorities.

3. Potential Impact on India

Several major climate and environmental projects are currently underway in India with the support of the World Bank, which could be affected by this policy shift. The major projects are as follows:

- **Reduction in Transport Emissions:** Electrified freight rail for cargo movement and development of inland waterways.
- **Natural Resource Management:** Forest restoration and biodiversity conservation in Madhya Pradesh and Meghalaya, and community groundwater management under the 'Atal Bhujal Yojana'.
- **Green Energy and Technology:** Development of solar parks, rooftop solar systems, grid-scale battery storage (Chhattisgarh), and development of green hydrogen for industries.
- **Disaster Management and Adaptation:** Renovation of large dams, flood forecasting and strengthening of embankments in Bihar's Kosi Basin, and Kerala's post-flood resilience program.
- **Health and Agriculture:** Climate-resilient agriculture for small farmers and 'One Health' programs to prevent zoonotic diseases (diseases that spread from animals to humans).

4. Concerns of Developing Countries and Global Implications

- **Crisis of Climate Finance:** Under the Paris Agreement, developing countries need adequate financial assistance from developed countries for adopting clean energy and climate adaptation (such as the recently set target of \$300 billion per year).
- **Questions on the Role of Multilateral Banks:** If major institutions like the World Bank back away from mandatory climate financing targets, it will become even more difficult for developing countries to mobilize funds at the global level.
- **New Mechanism of Accountability:** Although the Bank has removed the target, it has stated that it will continue to report progress to the Board through its scorecard indicators (net greenhouse gas emissions and the number of beneficiaries protected from climate risks).

Conclusion

The World Bank's removal of the mandatory climate financing target is a clear example of how the policies of global financial institutions are influenced by the domestic politics and geopolitical priorities of powerful nations. The argument of moving 'from input to outcome' may be theoretically sound to increase project effectiveness, but practically, it may slow down climate adaptation and mitigation efforts in developing countries.

Daily News Analysis

For countries like India, which are highly vulnerable to climate change, it is essential that they strengthen domestic resources and seek alternative sources of green financing through other multilateral forums (such as the New Development Bank or the Asian Infrastructure Investment Bank). Instead of viewing sustainable development and poverty alleviation as opposing forces, they should be seen as two sides of the same coin.

UPSC Prelims Exam Study Questions

Question: Which of the following sectors could be directly affected by the World Bank dropping its climate finance targets?

1. Railway electrification
2. Green hydrogen projects
3. Climate-friendly agriculture
4. Nuclear weapon modernization

Select the correct answer using the code given below—

- (a) 1 and 2 only
- (b) 2, 3 and 4 only
- (c) 1, 2 and 3 only
- (d) 1, 2, 3 and 4

Ans: (c)

UPSC Mains Practice Questions

Question: Analyze the potential impacts of the World Bank's decision to eliminate the mandatory target for climate-focused financing on the global development finance architecture and on developing countries like India. **(10Marks, 150Words)**

Page 06 :GS I :Social Issues / Preliminary Examination

Recently, the Government of India has released the 'Civil Registration System' (CRS) 2024 report. According to this report, there has been an unprecedented improvement in the level of registration of births and deaths in India, and it has reached extremely close to cent percent coverage. Additionally, the report presents important demographic data on the 'Sex Ratio at Birth' (SRB) and patterns of stillbirths in the country, which are essential for understanding social development and policy effectiveness.

Key Points & Analysis

1. Historical Expansion in Registration Coverage

- **High Registration Rate:** In the year 2024, the level of birth registration in India reached 99.1% and death registration reached 99.4%, which is extremely close to full coverage (100%).
- **Numerical Growth:** The number of registered births increased from 2.52 crore in 2023 to 2.54 crore in 2024. Similarly, registered deaths were recorded at 89.4 lakh, up from 86.6 lakh.
- **Critical Analysis:** The report clarifies that this increase in registration does not mean that the fertility or mortality rates in the country have suddenly risen; rather, it directly implies that our administrative system has now become capable of recording birth and death data more comprehensively and accurately.

2. Sex Ratio at Birth: National and Regional Scenario (SRB)

- **National Average:** The current Sex Ratio at Birth in India is 917 girls per 1,000 boys. For a biologically balanced society, it is necessary for this figure to improve further.
- **Top Performing States/UTs:**
 - Arunachal Pradesh (1,050): The best sex ratio in the country.
 - Andaman and Nicobar Islands (984), Meghalaya (974), Mizoram (972), and Kerala (970). These statistics show that gender equality is better in parts of Northeast and South India.

Over 99% of births, deaths registered in 2024: report

Ramya Kannan
CHENNAI

India's latest civil registration data, CRS 2024, released on Wednesday, suggest that registration is improving across the country, and that sex ratio at birth is improving in some places, but progress remains uneven across the States and Union Territories.

India's sex ratio at birth is 917 females per 1,000 males, meaning that 917 girls are born for every 1,000 boys.

While there is no surprise in the strong performance of Kerala (970 females per 1000 males) when it comes to sex ratio at birth, other States and Union Territories such as Arunachal Pradesh (1,050), Andaman and Nicobar Islands (984), Meghalaya (974), and Mizoram (972), are also top performers.

The weakest figures are from Nagaland (865),

Lakshadweep (865), and Jharkhand (890).

A sex ratio at birth that is close to the biological norm, or slightly above it, is an indicator that birth rates are not heavily distorted by sex selective abortions/terminations. India, with its legacy issue of a son preference has struggled towards achieving a balance in sex ratio at birth historically. A masculine skew at birth has long dominated headlines in several parts of the country.

Haryana and Punjab have recorded the lowest child sex ratios at birth. In the 2011 Census, Haryana recorded 834 girls per 1,000 boys, followed closely by Punjab at 846. The battle to correct the skew has been long and hard fought from a policy level. The number of still births in 2024 was recorded as 81,117 with a heavy urban tilt, with 69% of still births happening in urban centres.

The civil registration system has continued to expand its coverage, and improving registration will offer a clearer picture of the country's demographic transition.

Expanded coverage

Registered births rose from 2.52 crore in 2023 to 2.54 crore in 2024, while registered deaths increased from 86.6 lakh to 89.4 lakh. Thirteen States recorded above 90% of births and 15 States recorded above 90% of deaths. The CRS report shows that the level of birth registration reached 99.1% in 2024 and the level of death registration reached 99.4%, both extremely close to full coverage.

The rise in registrations does not necessarily mean that either fertility or mortality is rising sharply; it means the system has begun to capture births, deaths, still births and sex ratio at birth more comprehensively.

- **Weakest Performing States/UTs:**

- Nagaland (865) and Lakshadweep (865): The lowest sex ratio was recorded here.
- Jharkhand (890): This is also significantly below the national average.

- **Historical Context (Haryana and Punjab):** Traditionally, due to 'son preference' and female foeticide, Haryana (834 in the 2011 Census) and Punjab (846) were at the bottom-most rung. Following strict policy efforts (such as 'Beti Bachao Beti Padhao'), the situation is now gradually improving, but regional disparity still remains a major challenge.

3. Urban Tilt of Still Births

- **National Figure:** In the year 2024, a total of 81,117 stillbirths (children born dead) were recorded in the country.
- **Urban Tilt:** Out of the total stillbirths, 69% of the cases were recorded in urban centers.
- **Analysis:** This statistic is surprising because urban areas are considered to have better healthcare facilities. There could be two main reasons for this:
 - Institutional delivery and the registration system are very strong in cities, due to which every case gets recorded (whereas such cases might still remain hidden in rural areas).
 - Factors such as urban lifestyle, high stress, and delayed pregnancy can also increase obstetric complications.

4. Policy Significance of this Report

- **Accurate Demographic Policy Formulation:** With more than 99% registration, the government now has real-time data available. This allows schemes related to health, education, and child development to be better targeted.
- **Identification of Gender Discrimination:** The Sex Ratio at Birth (SRB) data clearly shows the regions where sex-selective abortions or social prejudices still exist. This provides a direction for the strict implementation of the 'PCPNDT Act'.

Conclusion

The CRS 2024 report reflects a major success in India's digital and administrative strengthening. The nearly cent percent registration of births and deaths proves that the reach of governance has strengthened down to the last citizen. However, the sex ratio of 917 at the national level and the massive inequality among states serve as a reminder that laws and digital systems alone are not enough; continuous social behavioral change and women empowerment campaigns are required to alter deeply conservative social mindsets like 'son preference'. The high stillbirth rate in urban areas also demands a review of the quality of urban health systems and antenatal care.

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UPSC Prelims Exam Study Questions

Question: 'Sex Ratio at Birth (SRB)' refers to—

- (a) the number of males per 1,000 females
- (b) the total number of females per 1,000 males
- (c) the number of live-born girls per 1,000 live-born boys
- (d) the number of stillbirths per 1,000 newborns

Ans: c)

UPSC Mains Exam Study Questions

Question: "Gender inequality cannot be eliminated solely through legal provisions." Critically examine this statement in the context of the sex ratio at birth. **(10 Marks, 150 Words)**



A recent report based on surveys by the Ministry of Rural Development has sparked a crucial debate regarding grassroots democracy and the declining efficacy of Gram Sabhas (village assemblies) in India. While the government views this merely as an administrative issue of enhancing the "vibrancy and energy" of the meetings, the report exposes a deeper contradiction. The core argument of the text is that instead of making Gram Sabhas autonomous democratic institutions, governments are using them merely as 'clearinghouses' to approve central and state schemes, leading to growing apathy towards meetings among the rural workforce.

Key Points & Analysis

1. Participation Fatigue and Administrative Overburden

- **Reason for Low Participation:** In the survey, 18% to 28% of the respondents stated that the main reason for not attending Gram Sabha meetings is the "lack of outcomes". People feel that attending the meetings does not resolve their local problems.
- **Technical Solutions vs. Ground Reality:** To overcome this apathy, the government is emphasizing technical solutions such as utilizing the 'NIRNAY' app and uploading the minutes of the meetings in real-time.
- **Negative Impact:** Due to this excessive technocratization, most of the time of Panchayat Secretaries is spent dealing with data entry and server errors rather than facilitating discussions. The bureaucracy exploits this situation to turn away MGNREGA workers by claiming that their demands 'could not be recorded in the system due to a server error'.

2. Economic Barriers and Dominance of the 'Leisured Elite'

- **Livelihood Crisis:** More than half (over 50%) of the barriers to participation are directly linked to the 'livelihoods' of the villagers. Due to the precarious nature of rural labor, a poor worker cannot afford to give up a day's wages to sit in a meeting.
- **Lack of Solutions:** The government has not institutionalized attendance in Gram Sabha meetings as a paid component of social protection. Consequently, Gram Sabhas have turned into a playing field exclusively for the 'leisured elite' (such as landlords and contractors) who possess both time and resources.

3. Lack of Financial Autonomy

- **Restrictions on Taxation:** According to the report, Gram Sabhas spend 13% of their time identifying local issues, but discuss revenue generation only 4% of the time. This is because Gram Panchayats have been systematically prevented from levying taxes or raising revenue at their own level.

Yes and no

Governments must respect the decision-making of gram sabhas

A new report, based on Rural Development Ministry surveys, opens a rare data-backed window into the erosion of India's grassroots democracy. But where the state has framed the issue as one of "vibrancy", the report highlights a paradox. It acknowledges that "participation fatigue" has kept citizens from engaging in gram sabhas whereas its solutions, such as more meetings and oversight, are a recipe to further alienate the rural working class. The 73rd Amendment empowers gram sabhas, but governments have reduced them to clearinghouses for central and State schemes. This fundamental aspect must change. However, in response to 18%-28% of respondents citing a lack of outcomes as the reason for low interest, the report pushes for greater use of the NIRNAY app and to upload meeting minutes in real-time. In the real world, panchayat secretaries thus have less time facilitating discussion even as lacklustre oversight has allowed officials to tell workers that their MGNREGA demands were 'not entered in the system' due to server errors. Similarly, that more than half of the barriers to participation are related to livelihoods could point as much to visibly systemic issues – such as the precarious nature of rural labour today – as to deliberate economic exclusion by the state, as scholars have highlighted. But the report does not acknowledge such divergent possibilities. Due to the state failing to institutionalise attendance as a paid component of social protection, gram sabhas have remained a playground for the leisured elite such as landlords and contractors.

According to the report, gram sabhas spend 13% of the time identifying local issues but only 4% discussing revenue generation. But gram panchayats have been systematically constrained from raising their taxes, leaving them dependent on grants. The 14th and 15th Finance Commissions grants tied panchayat spending to central priorities such as drinking water and sanitation, limiting local priorities to 'flagship' programmes such as the Jal Jeevan Mission and Swachh Bharat. There is thus no incentive for citizens to attend a meeting if the funds are being earmarked by Delhi bureaucrats. The report also states that Provisions of the Panchayats (Extension to the Scheduled Areas) (PESA) Act areas have "reasonably strong physical infrastructure". Under the PESA Act 1996 and related forest rights laws, gram sabhas have the right to provide prior informed consent for land acquisition and mining. However, the state routinely bypasses them or uses the excuse of low participation to manufacture consent. The Hasdeo Arand protests were rooted in this issue. There is a right to say 'no' and the state simply needs to acknowledge it. If 'yes' must be the only answer, the report's grouses are a farce.

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- **Tied Grants:** Grants from the 14th and 15th Finance Commissions have tied Panchayat expenditures to the priorities of the Central Government (such as drinking water and sanitation). Instead of addressing local needs, it is mandatory to spend money on 'flagship' programs (like the Jal Jeevan Mission and Swachh Bharat) decided by bureaucrats sitting in Delhi. When local people have no authority over the utilization of funds, they lack the motivation to attend meetings.

4. PESA Act and 'Manufactured Consent'

- **Violation of Rights:** Under the PESA (Provisions on the Panchayats [Extension to the Scheduled Areas]) Act, 1996, and Forest Rights laws, the "prior informed consent" of Gram Sabhas is mandatory for land acquisition and mining in Scheduled Areas.
- **State Intervention:** Governments often bypass these rules or manufacture 'fake consent' by using low attendance as an excuse. The roots of the Hasdeo Arand protests in Chhattisgarh lay in this very issue, where the local Gram Sabha's right to say 'No' was not respected.

Conclusion

The core objective of the 73rd Constitutional Amendment Act was the decentralization of power and involving the ordinary citizen in the decision-making process. However, in the current system, Gram Sabhas are left with no option to say 'No'; they are only expected to say 'Yes', which goes against the fundamental principles of democracy.

If grassroots democracy is to be truly strengthened, Gram Sabhas must be granted financial autonomy instead of being turned into mere pipelines for implementing top-down schemes. Furthermore, to ensure the participation of poor laborers, mechanisms like compensation or an honorarium for attending meetings should be considered, so that these institutions can break free from the influence of the elite and become truly inclusive.

UPSC Prelims Exam Study Questions

Question: Which of the following statements can most effectively enhance the effectiveness of the Gram Sabha?

- (a) Increasing the financial autonomy of Panchayats
- (b) Making only digital attendance mandatory
- (c) Reducing the number of Gram Sabha meetings
- (d) Abolishing the taxation powers of Panchayats

Ans: a)

UPSC Mains Practice Questions

Question: The Gram Sabha is considered the soul of the Panchayati Raj system. Briefly analyze the key factors affecting its effectiveness in the present times. (10 Marks, 150 Words)

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Over the past decade, India has made unprecedented progress in its energy sector—whether it is universal household electrification (Saubhagya Yojana), access to clean cooking fuel (Ujjwala Yojana), or the rapid expansion of renewable energy capacity. To achieve the goals of 'energy self-reliance' by the year 2047 and 'net-zero' emissions by 2070, an integrated approach is now required. A policy paper released by the 'Indian National Science Academy' (INSA) in May 2026 proposes a 'Unified National Energy Framework', which emphasizes aligning the country's diverse energy resources, technologies, and institutions toward a shared national purpose.

A unified policy architecture for India's energy future

India has made remarkable progress in transforming its energy landscape over the past decade. From achieving near-universal household electrification and expanding access to clean cooking fuel to becoming one of the world's fastest-growing renewable energy markets, it has demonstrated a strong commitment to ensuring energy access while advancing sustainable development.

As India looks ahead to the goals of energy self-reliance by 2047 and net-zero emissions by 2070, the next phase of the energy transition will require an increasingly integrated approach to planning and governance. A policy brief released by the Indian National Science Academy (INSA) in May 2026 highlights the importance of a unified national energy framework that can help align diverse energy resources, technologies and institutions towards common national objectives.

The complexity of India's energy system

The need for such an approach is evident from the scale and complexity of India's energy system. While domestic energy production continues to expand, there is a dependence on imports for a significant share of oil and natural gas requirements. At the same time, energy demand is expected to grow steadily as economic development, industrialisation and urbanisation continue. Managing these multiple priorities, energy security, affordability, sustainability and economic growth, requires coordinated planning across sectors and fuels.

India has already established strong foundations through initiatives such as the Saubhagya Scheme, the Pradhan Mantri Ujjwala Yojana, and ambitious renewable energy programmes. Renewable energy installed capacity has grown from approximately 40 GW in 2015 to approximately 260 GW by 2025, reflecting a determination to diversify the energy mix. As



Anjan Ray

Investment Partner,
Navam Capital and
former Director,
CSIR-Indian Institute
of Petroleum



Famida Khan

Project Scientist-II,
Indian National
Science Academy

A policy brief
from the
INSA-Centre for
Science,
Technology,
Innovation and
Policy outlines a
four-pillar
framework

the energy ecosystem becomes more diverse, however, greater coordination among generation, transmission, storage, distribution and emerging technologies will become increasingly important.

How the framework works

The INSA policy brief proposes a framework built around four mutually reinforcing pillars: adequacy, access, affordability and appropriate sustainability.

First, adequacy focuses on ensuring reliable and diversified energy supplies through a balanced portfolio of conventional and emerging energy sources, supported by modern infrastructure, energy storage and digital technologies. The objective is to strengthen energy resilience while reducing long-term vulnerabilities.

Second, access emphasises reliable and equitable energy services for all citizens. Building on the country's achievements in electrification and clean cooking access, the framework advocates strengthening last-mile delivery, improving service quality and expanding decentralised energy solutions where appropriate.

Third, affordability recognises that a successful energy transition must remain economically viable for households, businesses and industries. The framework highlights the role of innovative financing mechanisms, efficient markets and consumer-focused safeguards in supporting an inclusive transition.

The fourth pillar, appropriate sustainability, underscores the importance of pursuing sustainability in a manner that is aligned with India's developmental priorities and resource endowments. Rather than adopting a one-size-fits-all approach, the framework advocates solutions that reflect India's unique social, economic and environmental context.

This includes support for local communities, workforce development and region-specific transition pathways.

The policy brief also identifies circular economy practices and carbon capture, utilisation and storage (CCUS) as important cross-cutting enablers that can complement renewable energy deployment and contribute to reducing emissions from industrial sectors.

Recognising that energy transitions occur over decades, the framework proposes a phased approach. Near-term priorities include strengthening infrastructure, accelerating renewable energy deployment, supporting emerging technologies such as green hydrogen, and developing institutional mechanisms that can facilitate long-term coordination. Over time, the emphasis would shift toward deeper integration of low-carbon technologies, expanded use of bio-resources and the development of a more interconnected and resilient energy ecosystem.

Viewing energy as whole

At its core, the framework highlights the value of viewing India's energy system as an integrated whole. Coal, renewables, biomass, natural gas, waste-to-energy systems and emerging clean technologies each have a role to play in supporting the country's development aspirations. Their effectiveness can be enhanced through greater coordination and long-term strategic planning.

India's energy transition is not only about expanding capacity; it is about creating a resilient, affordable and sustainable energy system capable of supporting future growth. By providing a common framework for aligning diverse energy pathways, the proposed approach offers a constructive road map for advancing national priorities while strengthening energy security for generations to come.

Key Points & Analysis

1. Complexity of India's Energy System

- **Dependence on Imports:** Despite growth in domestic production, India still relies on imports for most of its crude oil and natural gas requirements, making India's energy security vulnerable to global geopolitical turmoil.
- **Rising Demand:** Driven by economic growth, industrialization, and rapid urbanization, India's energy demand will continue to grow steadily in the coming decades.

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- **The Challenge of Balance:** India faces the challenge of simultaneously managing four priorities: energy security, affordability, sustainability, and economic growth.

2. Foundations and Expansion of Renewable Energy

- **Massive Increase in Capacity:** India's installed renewable energy capacity has increased from approximately 40 GW in 2015 to around 260 GW by 2025.
- **The Need for Coordination:** As this energy ecosystem becomes more diverse, it has become imperative to establish better synergy between power generation, transmission, energy storage (Battery/Pumped Storage), distribution, and emerging technologies.

3. Four Pillars of the INSA Framework

This new framework by INSA is based on four mutually reinforcing pillars:

- **a) Adequacy:** Ensuring reliable energy supply through a balanced portfolio of conventional (coal, gas) and emerging energy sources, backed by modern infrastructure, energy storage, and digital technologies.
- **b) Access:** Delivering quality and reliable energy services to the last mile of society. It advocates for grid strengthening and, where necessary, the expansion of decentralized energy solutions (such as off-grid solar energy).
- **c) Affordability:** Ensuring that the energy transition remains economically viable for ordinary households, businesses, and industries. This requires innovative financing and efficient markets.
- **d) Appropriate Sustainability:** Finding sustainable solutions tailored to India's own developmental priorities and resources, rather than mindlessly adopting global standards of environmental protection. This includes local community support and sector-specific transition plans.

4. Enablers & Phased Approach for the Future

- **Cross-Cutting Technologies:** Along with renewable energy, the report considers 'circular economy' practices and technologies like 'Carbon Capture, Utilization, and Storage' (CCUS) as critical for reducing emissions from industries.
- **Phased Roadmap:**
 - **Near-term Priorities:** Strengthening infrastructure, promoting emerging technologies like Green Hydrogen, and developing institutional mechanisms for long-term coordination.
 - **Long-term Priorities:** Deep integration of low-carbon technologies, expanded utilization of bio-resources, and creating a resilient energy ecosystem.

Conclusion

This INSA policy paper emphasizes that India must view coal, renewable energy, biomass, natural gas, and waste-to-energy systems as an 'integrated whole' rather than in isolation. The energy transition does not merely mean increasing renewable

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energy capacity; it means creating a resilient, affordable, and sustainable mechanism that can drive future economic growth. This unified policy framework paves a practical path for India to secure its energy needs while simultaneously achieving its climate goals.

UPSC Prelims Practice Questions

Question: Consider the following statements regarding India's energy sector—

1. India has set a target to achieve net-zero emissions by the year 2070.
2. India has set a goal to achieve self-reliance in the energy sector by the year 2047.
3. India still relies on imports for the majority of its crude oil and natural gas requirements.

Select the correct answer using the code given below—

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2, and 3

Ans: d)

UPSC Mains Practice Questions

Question: Why is it essential for India to strike a balance between energy security, energy transition, and economic growth? Explain briefly. **(10 Marks, 150 Words)**



The long-standing dispute between India and global sovereign rating agencies has once again come into discussion after Union Commerce Minister Piyush Goyal recently questioned the functioning of these financial institutions. Global rating agencies (such as S&P, Moody's, and Fitch) have long kept India at the lowest tier of the 'Investment Grade'—that is, just one or two notches above 'Junk' status. The Government of India's primary argument is that these agencies ignore India's strong macroeconomic fundamentals and its track record of debt repayment, and a major portion of their evaluation is based on highly subjective and qualitative criteria.

Key Points & Analysis

1. What is a Sovereign Credit Rating and Why is it Important?

- Basis of Evaluation:** These agencies assess a country's (government's) 'ability' and 'willingness' to service its debt. The rating is represented on an alphabetical scale (e.g., AAA, AA, BBB, C, D).
- Impact on Interest Rates:** A 'AAA' rating means the risk of default (inability to repay debt) is zero, allowing that country to borrow from the international market at very low interest rates. Conversely, a lower rating requires the country to pay a risk premium, making foreign debt highly expensive.
- Impact on Investment:** Many global institutional investors (such as pension funds) are legally permitted to invest only in countries or bonds with high ratings. A low rating restricts the flow of Foreign Portfolio Investment (FPI) and Foreign Direct Investment (FDI) into India.

What are India's problems with most credit ratings agencies?

India has consistently been rated just a grade or two above 'junk' status when institutions will stop lending money for fear of default; until recently, these ratings were unchanged for more than a decade and, in some cases, nearly two decades; the main allegation is it is based on qualitative aspects

EXPLAINER
T.C.A. Sharad Raghavan
NEW DELHI

While speaking at a business conference in London last week, Commerce Minister Piyush Goyal questioned the methodologies employed by sovereign ratings agencies in assigning ratings to India, saying they have been "unfair to India". On the other hand, he praised one ratings agency – CareEdge Ratings – for being "objective". This is not the first time the Indian government has pointed out its problems with the global sovereign ratings agencies. The Hindu looks into what the issues are.

What do the ratings agencies measure?
India is rated by seven international sovereign credit rating agencies: Standard and Poor's (S&P), Moody's Investors Service, Morningstar DBRS, Fitch Ratings, Japanese Credit Rating Agency (JCR) and Rating and Investment Information (R&I), and CareEdge Ratings. The three most commonly accepted global ratings agencies are S&P, Fitch, and Moody's. The core role of these agencies is to measure the ability and willingness of an entity to repay its debt. These entities can be com-



panies, municipal corporations, states, and, in the case of sovereign ratings, Central or Union governments.

Ratings are assigned on an alphabet scale, with Fitch and S&P assigning AAA to their highest rating and Moody's assigning Aaa to it. The next lower scales are AA+, AA, A+, A, and A-, before moving on to the 'B' ratings in the same format. The lowest rating is D, implying the entity is in default.

Moody's ratings follow the same pattern, though its letters differ. These ratings are important because they determine the interest rate at which the rated entity can borrow at. If an entity is rated AAA, then that means there is no risk of a



The ratings determine the interest rate at which the rated entity can borrow at: If an entity is rated AAA, then it means there is no risk of a default and so it can borrow at lowest rate

default and so that entity can borrow at the lowest interest rates. However, the lower the rating, the lower the perceived ability or willingness to repay debt and so higher the interest rate to mitigate that risk.

Now, 'ability' and 'willingness' to repay debt are two very different metrics. The ability to repay is a much more quantitative

metric, since there are hard numbers that can prove whether a country can repay its debt or not. Willingness to repay is an entirely different matter. It is a more qualitative metric and relies more on opinion rather than hard numbers.

How has India been rated so far?
India's ratings by most of the agencies has been at the lowest level of the investment grade ratings. That is, India has consistently been rated just a grade or two above 'junk' status, which is when institutions will stop lending money for fear of default. Until recently, these ratings were unchanged for more than a decade and, in some cases, nearly two decades. For example, S&P up-

graded India's long-term sovereign credit rating to 'BBB' from 'BBB-' in August 2025, the first upgrade by it in 18 years. Similarly, in 2017, Moody's upgraded India's rating to Baa2 (equivalent of BBB) from Baa3, its first upgrade in 13 years. There were a couple of other ratings upgrades in 2025, with Rating and Investment Information in September 2025 upgrading India to BBB+ from 'BBB' and Morningstar DBRS in May that year upgrading India to BBB.

What are India's issues with the ratings?

Despite the recent upgrades, India's ratings still remain just above junk grade. During his speech in London, Mr. Goyal pointed out these agencies "haven't recognised the India growth story, the strong India fundamentals and the sovereign capabilities... and captured it as much as a rating agency should have done". Previously, Finance Minister Nirmala Sitharaman also pointed out the same thing, calling for a reform of the ratings agencies' methodologies.

Even the Economic Survey has taken up this issue. The 2020-21 edition by then Chief Economic Adviser Krishnamurthy Subramanian had an entire chapter dedicated to the matter. In it, he pointed out that this was the first time that the fifth largest

economy in the world was assigned such a low rating. He also went on to show India's macroeconomic fundamentals are strong and more than enough to highlight its ability to repay its debt. On the willingness front, he pointed out that India has never defaulted on its sovereign debt in the past despite several crises, and that this should go a long way in proving its willingness to pay.

The main allegation is the global ratings agencies rely too much on the qualitative aspects of the metrics rather than the quantitative ones. The feeling is that these qualitative metrics are often based on the opinions of a small group of experts and so can be extremely subjective, skewing the overall rating.

Quantitative metrics – where India performs relatively well – have a relatively lower weightage.

Why is CareEdge Ratings favoured?
CareEdge Ratings is the first sovereign ratings agency to be headquartered in India and so the perception is it can better reflect ground realities of India's economy. However, there are some key methodological factors that make CareEdge stand apart. Overall, in its note on methodology, CareEdge said primary importance has been given to quantitative factors.

2. Current Status of India's Rating

- Slow Progress:** In August 2025, S&P upgraded India's rating from 'BBB-' to 'BBB' after 18 years. Similarly, Moody's and other agencies (such as R&I and Morningstar DBRS) have also made marginal improvements in recent years, but these still remain at the lowest rung of the investment grade (just above junk status).

Daily News Analysis

- **Historical Contradiction:** In the Economic Survey (2020-21), the then Chief Economic Adviser highlighted that it is the first time in history that the world's fifth-largest economy (which is now on track to become the third-largest) has been given such a low rating.

3. Core Issues India Faces with Rating Agencies

- **a) Imbalance of Quantitative vs. Qualitative Criteria:**
 - The 'ability' to repay debt is a quantitative metric that can be measured through concrete data like Gross Domestic Product (GDP) growth rate, Foreign Exchange Reserves, and fiscal deficit, where India's performance is excellent.
 - However, agencies give excessive weight to qualitative aspects such as the 'willingness' to repay debt. These aspects depend on the personal opinions of experts regarding institutional quality, political stability, and administrative efficiency, which can be highly subjective and plagued by bias.
- **b) Disregard for the History of Sovereign Defaults:**
 - India's history bears witness to the fact that it has never defaulted on its sovereign debt, despite severe economic crises (such as the 1991 Balance of Payments crisis). Given that India's 'willingness' to repay debt is 100% proven, a low rating does not seem rational.
- **c) Lack of Transparency in Methodologies:**
 - Indian authorities believe that the methodology of these agencies functions like a 'black box', where the ground realities of developing nations and the major structural reforms undertaken by them (such as GST, UPI, strengthening of the banking sector) are not given appropriate weightage.

4. Why India is Prioritizing 'CareEdge Ratings'?

- **Understanding Ground Realities:** CareEdge is the first sovereign rating agency headquartered in India. It is believed that it can understand the unique characteristics and complexities of the Indian economy much better than global agencies.
- **Difference in Methodology:** Unlike global agencies, CareEdge has assigned primary importance to quantitative factors in its rating methodology, significantly reducing the scope for subjective opinions or political biases.

Conclusion

India's confrontation with global credit rating agencies is not merely about financial data, but is part of a demand for reform in the Global Financial Architecture. Current rating methodologies remain skewed toward the benchmarks of developed nations, demonstrating a bias against emerging economies.

Since India is increasing its reliance on sovereign green bonds and international bond indices (such as the JP Morgan Emerging Market Index) to attract global investment, an improvement in these ratings is essential. India must leverage international forums (such as G20 and BRICS) to press for reform and transparency in the methodologies of rating agencies, while also promoting the development of alternative multilateral platforms like a BRICS rating agency to ensure fair ratings for developing countries.

UPSC Prelims Exam Study Questions

Question: Which one of the following best describes a 'Junk' rating?

- (a) Highest level of investment safety
- (b) Rating indicating speculative investment with relatively high default risk
- (c) Rating applicable only to private companies
- (d) Rating assigned only to green bonds

Ans: b)

UPSC Mains Practice Questions

Question: What is a Sovereign Credit Rating? Discuss its significance for a country's economic growth and external financing. **(10 Marks, 150 Words)**



The case for building India's coal chemistry capability

There are two ways a country can survive an energy shock: by managing it skilfully through diplomacy, diversification, and fiscal measures, or by reducing dependence on the disrupted resource. India excelled at the first during the disruption in the Strait of Hormuz in 2026, with its refineries demonstrating exceptional technical flexibility in adapting to crude supply disruptions. The crisis reaffirmed that indigenous scientific capability and technological self-reliance are the decisive forms of insurance against energy market volatility – far more durable than any diplomatic or military arrangement alone. However, India has yet to reduce its underlying dependence, and coal offers a key opportunity to begin.

Same discipline for coal chemistry

Before turning to that opportunity, it is worth understanding why refinery flexibility proved so effective, because the same discipline will be required for coal chemistry. India's supplier base has nearly tripled over the past two decades. Each supplier provides a different crude slate, with distinct density profiles, sulphur content, and viscosity characteristics, and a refinery engineered for only one crude type becomes vulnerable to supply disruptions. Through investments in indigenous research, metallurgical advances, process innovation, and workforce training, India's refining sector developed the capability to process feedstock across a broad range of specifications. When the Strait of Hormuz closed and sourcing options shifted abruptly, Indian refineries adapted with technical confidence, processing crude from the Americas, the Atlantic Basin, West Africa, Russia, and India's West Asia partners. That flexibility at scale is the product of indigenous research and development, technical discipline, and engineers who understand their systems as interconnected processes rather than fixed machines.

The speed of the transition provides concrete evidence of this capability. Within weeks of the closure, non-Hormuz sourcing increased from 55% to 70% of India's crude intake. That pivot reflected a decade of upstream diversification combined with the downstream technical flexibility built into India's refinery fleet. India's private and public sector refineries had the engineering capability to process multiple crude types, adjust operating parameters at short notice, optimise fractionation patterns for different feedstock specifications, and maintain product quality and safety throughout the transition.

This capability was built through sustained investment in process understanding, operator training, and the institutional knowledge that enables a complex industrial system to absorb shocks without fracturing.

The liquefied petroleum gas (LPG) story offers a clear example of how indigenous refining



R.A. Mashelkar
Distinguished scientist and former Director General of the Council of Scientific and Industrial Research (CSIR)

capability can absorb a supply shock faster than markets can price it. India's LPG import infrastructure had roughly doubled over the preceding decade, providing greater distribution redundancy.

When the Strait of Hormuz closure threatened LPG availability, the bottleneck was not at the import ports but in how much LPG the existing refinery fleet could produce from the available feedstock. Under the LPG control order, refineries were directed to maximise yields, and within five days, domestic production increased from 35 Thousand Metric Tonnes (TMT) per day to 54 TMT per day, with engineers adjusting fractionation and cracking units in real time. That increase was engineering in action, not an accounting adjustment. It was one half of how India closed the gap; disciplined demand management provided the other. The production side – which is the focus of this article – rested entirely on technical capability built through years of sustained investment.

Energy security through molecules

Refinery flexibility solved the problem that the Strait of Hormuz crisis actually presented: how to keep a wide range of crude flowing through a fixed set of plants. It did not, and could not, solve the deeper structural problem the crisis exposed – that India's LPG dependence is far more concentrated than its crude dependence. A refinery can be engineered to process crude from 40 different countries. LPG, however, cannot be engineered to come from 40 different geographies, because the molecule is overwhelmingly sourced from a handful of Gulf and Atlantic Basin producers. The real long-term solution to LPG vulnerability is not refining the same imported molecule more efficiently. It is producing a domestic molecule that serves the same purpose.

That molecule already exists, and India has the raw material to produce it in extraordinary abundance. Dimethyl ether (DME) is a clean-burning gas chemically similar enough to LPG that it can be blended directly into existing cylinders and pipelines, requiring no new distribution network. It can be produced through coal gasification, which converts coal into syngas and then into DME. India possesses some of the world's largest coal reserves, and the Bureau of Indian Standards has already approved blending up to 20% DME with LPG. One recent industry assessment found that a 20% blend sourced from coal gasification could displace roughly 6.3 million tonnes of LPG imports each year, saving nearly ₹34,000 crore in foreign exchange annually. That is not a marginal gain. It is the kind of structural reduction in import dependence that the Hormuz crisis should have taught India to take seriously.

This crisis has demonstrated how India's investments – in institutions, infrastructure, diplomacy and human capability – can translate

into national resilience. Innovation is often equated with breakthrough technologies. In reality, it is equally about creating new ways of integrating people, institutions, and ideas to solve unprecedented problems. The Ministry of Petroleum and Natural Gas's response exemplified this broader understanding of innovation.

From innovation to execution

Years ago, scientists at the CSIR's National Chemical Laboratory developed an indigenous technology for converting methanol into DME, a clean substitute for LPG. During the recent crisis, it was deeply gratifying to see the Centre for High Technology under the Ministry of Petroleum and Natural Gas move with remarkable speed to approve the scaling up of this indigenous pilot technology. It was a powerful reminder that investments in science made years earlier can become strategic national assets when unexpected crises arise.

This is exactly how innovation ecosystems should function. Research laboratories generate knowledge, government institutions identify strategic opportunities, and industry scales promising technologies. Together, they build national resilience.

That structural reduction is no longer waiting on policy. The Union Cabinet has approved a ₹37,500 crore scheme to promote surface coal and lignite gasification, explicitly citing the West Asia crisis as part of its rationale and targeting 100 million tonnes of coal gasification annually by 2030. The scheme provides an incentive of up to 20% of plant and machinery costs, separate from the DME blending ratio discussed above, and extends coal linkage tenure to 30 years – the kind of long-term horizon certainty that capital-intensive process industries require before committing investment. What remains is execution. India's coal has a higher ash content than the cleaner coal that underpinned China's dominant coal-to-chemicals industry, and domestic gasification capacity is still far below the ambition this scheme represents. Closing that gap is now a question of industrial discipline and investment, not policy intent. The intent has already been settled.

The remaining work – closing the ash-content gap, scaling gasification capacity, and building the technical depth China has spent two decades accumulating – is the same kind of work India's refining sector undertook over two decades of investment in metallurgy, catalysis, and process engineering. The lesson of Hormuz is not that India's refineries were ready and nothing else needs to change. It is that indigenous capability, once built, becomes a permanent strategic asset, and that the policy commitment to building the next one is now in place. The molecule is different, but the discipline required to master it is exactly the same as that which built the refineries that carried India through this crisis.

India's refinery resilience in the West Asia crisis points to its coal chemistry future

GS Paper III: Indian Economy

UPSC Mains Exam Practice Questions: "Energy self-reliance is not merely a matter of energy generation but also a question of technological self-reliance." Discuss this statement in the context of India's energy sector. (15 Marks, 250 Words)

Context : During the oil supply crisis in the 'Strait of Hormuz' in the year 2026, India maintained its energy security on the strength of the technical flexibility of its refinery system and efficient diplomacy. However, this crisis has exposed a deep structural vulnerability of India—namely, its excessive and concentrated dependence on the import of Liquefied Petroleum Gas (LPG). Against this backdrop, Dr. Mashelkar strongly advocates for developing 'Coal Chemistry' and 'Coal Gasification' capabilities by utilizing India's vast coal reserves. He believes that the production of indigenous molecules like 'Dimethyl Ether' (DME) alone can provide long-term energy self-reliance to India.

Key Points & Analysis

1. The Hormuz Lesson and Resilience of Indian Refineries

- **Technical Adaptability:** When the Strait of Hormuz was closed, Indian refineries increased crude oil imports from non-Hormuz sources from 55% to 70% within just a few weeks. India easily processed crude oil of varying densities and sulfur contents (Crude Slate) sourced from diverse regions such as the US, West Africa, and Russia.
- **Surge in Domestic LPG Production:** During the crisis, at the direction of the government, engineers made real-time modifications to oil refining processes to increase domestic LPG production from 35 Thousand Metric Tonnes (TMT) per day to 54 TMT per day within a mere 5 days.
- **The Lesson:** This success demonstrates that indigenous investments made over past years in catalysis, metallurgy, and human resources prove to be the strongest strategic insurance during times of crisis.

2. Structural Vulnerability of the LPG Sector and the DME Alternative

- **Concentration of Imports:** While crude oil can be purchased from 40 different countries across the world, the source of LPG is limited to a handful of countries in the Gulf and Atlantic basins, making this sector highly sensitive to geopolitical shocks.
- **The Synonymous Molecule - Dimethyl Ether (DME):** DME is a clean-burning gas that is chemically similar to LPG. It can be directly blended into existing LPG cylinders and pipelines without requiring any new infrastructure.
- **Indian Standards and Economic Benefits:** The Bureau of Indian Standards (BIS) has already approved DME blending up to 20% in LPG. According to an estimate, if 20% DME is produced domestically through coal gasification, India can reduce LPG imports by 63 lakh tonnes every year, which will save the country approximately ₹34,000 crore in foreign exchange annually.

3. From Lab to Land: Innovation to Execution

- **Development of Indigenous Technology:** CSIR's National Chemical Laboratory (CSIR-NCL) had years ago developed an indigenous pilot technology to convert methanol into DME.
- **Expedited Administrative Approval:** Considering the current crisis, the 'Center for High Technology' under the Ministry of Petroleum and Natural Gas has approved scaling up this indigenous technology to an industrial level. This reflects an ideal coordination among scientific research, government policy, and industry.

4. Government Policies and Key Challenges

- **Financial Incentive Scheme:** The Union Cabinet has approved a ₹37,500 crore scheme to promote coal and lignite gasification, aiming to gasify 100 million tonnes of coal annually by 2030. This scheme ensures a subsidy of up to 20% on the cost of plant and machinery along with long-term coal linkages for 30 years.
- **Major Technical Challenge (High Ash Content):** The ash content in India's coal is very high, which is a major hurdle compared to China's clean coal-based chemical industry (Coal-to-Chemicals Industry). India will have to develop gasification technologies uniquely suited to its high-ash coal on a large scale.

Conclusion

The crisis in the Strait of Hormuz has taught India the lesson that diplomatic pacts may be temporary, but indigenous scientific capability and technological self-reliance are permanent strategic assets. The same industrial discipline and investment that India demonstrated over the past two decades to achieve mastery in the field of oil refining now need to be replicated in the field of 'Coal Chemistry'. The government's policy intent is now clear; the time has come for the efficient execution of this ambitious gasification plan so that India can march toward complete self-reliance in the energy sector.

