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Daily News Analysis

# The Hindu Important News Articles & Editorial For UPSC CSE

## Tuesday, 31 March, 2026

## Edition : International Table of Contents

## Page 01 : GS III : Indian Economy / Prelims Exam

The Index of Industrial Production (IIP) is a key macroeconomic indicator that measures the short-term changes in the volume of production of a basket of industrial products. Released monthly by the National Statistical Office (NSO) under the Ministry of Statistics and Programme Implementation (MoSPI), it serves as a barometer of industrial health. The February 2026 data shows a marginal acceleration to 5.2%, signaling a resilient yet "K-shaped" industrial recovery where investment-heavy sectors are thriving while mass consumption remains sluggish.

# Manufacturing, capital goods lift IIP growth to 5.2% in Feb.

**The Hindu Bureau**
NEW DELHI

Growth in India's industrial activity accelerated marginally to 5.2% in February, driven by a quickening of growth in the manufacturing and capital goods sectors, data released by the Centre on Monday showed.

The data on the Index of Industrial Production for February, released by the Ministry of Statistics and Programme Implementation, shows that the final growth for January was also upgraded to 5.1% from the provisional 4.8% stated as part of last month's data release.

Within the Index, growth in the manufacturing sector accelerated to 6% in February, from 5.3% in the previous month. This was also considerably faster than the 2.8% in growth in February last year. The mining and quarrying sector, on the other hand, saw growth slowing to a four-month low of 3.1% in February 2026, down from 4.3% in January. This was, however, faster than the 1.6% seen in February 2025.

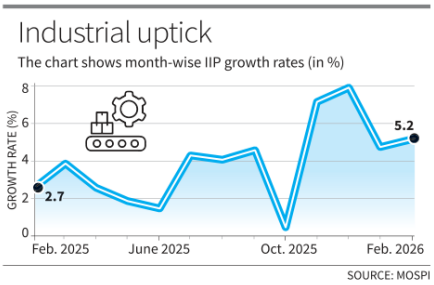
Growth in the electricity sector, too, slowed to 2.3% in February 2026 from 5.1% in January.

"The growth is investment led, with basic metals, automobiles, machinery, and double digit gains in capital goods and infrastructure/construction goods pointing to a capex and infrastructure driven upcycle," Rajeev Sharan, Head of Research at Brickwork Ratings said.

Notably, growth in the capital goods sector accelerated to a nine-month high of 12.5% in February 2026 from 4.1% in the previous month. This performance on the back of a relatively strong performance of 8.1% in February of last year.

Consumer demand, however, seems to have slumped, according to the data. The consumer durables sector contracted 2.1% in February 2026, the sector's worst performance in 27 months. The consumer non-durables sector, too, contracted 0.6%, the second consecutive month of contraction.

"Overall, the data confirms that investment linked sectors are anchoring growth, while softer consumer non durables and modest mining and electricity gains highlight areas where the recovery is still incomplete," Mr. Sharan said. "From a credit rating perspective, sustained manufacturing and investment momentum support credit strength, though uneven demand means fundamentals are still evolving."




### Key Data Analysis

### 1. Sectoral Performance (Broad Categories)

**Manufacturing (Weight: 77.6%):** The primary engine of growth, jumping to 6% (up from 5.3% in Jan). This is crucial as manufacturing is the backbone of the "Make in India" initiative.

**Mining (Weight: 14.4%):** Slowed to a four-month low of 3.1%. While slower than January, it remains higher than the previous year, reflecting volatility in extraction activities.

**Electricity (Weight: 7.9%):** Witnessed a sharp slowdown to 2.3% from 5.1% in January, possibly due to seasonal variations in energy demand.

### 2. Use-Based Classification: The Story of Two Indias

The use-based data provides deeper insights into the nature of the current economic cycle:

| Category | Growth (Feb 2026) | UPSC Significance |
|---|---|---|
| **Capital Goods** | **12.5%** | Signals a robust Private Capex cycle. Businesses are buying machinery, indicating future production capacity expansion. |

| Category | Growth (Feb 2026) | UPSC Significance |
|---|---|---|
| **Infrastructure/ Construction** | **11.2%** | Reflects the government's continued push on "Gati Shakti" and national infrastructure projects. |
| **Consumer Durables** | **-2.1%** | A 27-month low. Indicates high-end/discretionary demand (cars, ACs, electronics) is facing a temporary saturation or credit-led cooling. |
| **Consumer Non-Durables** | **-0.6%** | Second consecutive contraction. This is a red flag for rural demand and mass-market consumption (FMCG). |

**Critical Commentary for Mains**

**A. Investment-Led vs. Consumption-Led Growth**

The current data confirms that India's growth is currently Investment-led. The surge in Capital Goods (12.5%) and Basic Metals suggests that the "Virtuous Cycle" of investment—where government spending crowds in private investment—is active. However, for this to be sustainable, it must eventually translate into Consumption-led growth.

**B. The Consumption Divergence**

The contraction in consumer non-durables suggests that high food inflation and erratic rural incomes are weighing down the bottom of the pyramid. If mass consumption doesn't recover, the high growth in capital goods may eventually hit a ceiling due to a lack of end-users.

**C. Structural Shifts**

Strong growth in Basic Metals and Automobiles highlights India's emerging strength in the global supply chain, likely bolstered by Production Linked Incentive (PLI) schemes.

**Conclusion**

While the headline IIP growth of 5.2% is encouraging, the underlying data reveals a "dual-speed" economy. The robust performance of capital and infrastructure goods provides a strong foundation for long-term GDP growth and matches the government's fiscal focus. However, the persistent weakness in consumer non-durables serves as a policy warning. For a balanced recovery, future interventions may need to focus on reviving rural demand and mitigating the impact of inflation on the common man's purchasing power.

## UPSC Prelims Exam Practice Question

**Ques: With reference to the Index of Industrial Production (IIP), consider the following statements:**

1. It is released annually by the Ministry of Finance.

2. Manufacturing has the highest weight in the IIP.

3. It measures changes in the value of production.

**Which of the statements given above is/are correct?**

(a) 2 only

(b) 1 and 3 only

(c) 2 and 3 only

(d) 1, 2 and 3

**Ans: a)**

## UPSC Mains Exam Practice Question

**Ques:** Explain the significance of the use-based classification in IIP. How does it help in understanding economic trends? **(150 Words)**

## Page 06 : GS II : Governance / Prelims Exam

The Union Government's draft amendment seeks to expand the oversight of the Ministry of Information and Broadcasting (I&B) over individual social media users. Previously restricted to regulating digital news publishers and OTT platforms, the new rules aim to treat "non-publisher users" (individuals) who post news and current affairs content under the same regulatory umbrella. This move ignites a critical debate between national security/information integrity and the Fundamental Right to Freedom of Speech.

# Centre eyes new regulation to cover social media users

It plans to amend IT Rules and allow I&B Ministry to send takedown notices to individual users for posts; Internet Freedom Foundation calls it 'massive expansion of unconstitutional censorship'

**Aroon Deep**
NEW DELHI

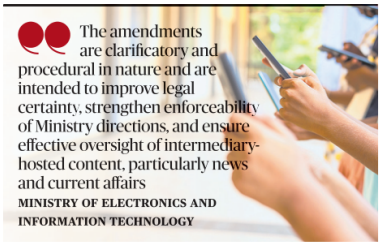
The Union government is planning to allow the Ministry of Information and Broadcasting (I&B) to send takedown notices to individual users for their social media posts. Under the IT Rules, 2021, the Ministry could issue such notices only to online news platforms.

In addition, any advisories to social media platforms by the Ministry of Electronics and Information Technology would, if not complied with, affect the firms' so-called "safe harbour", allowing them to be held liable in court for users' content.

These changes have been put forth in a draft amendment on Monday to the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021, which were amended as recently as February.

In an explanatory memorandum to the proposed amendment, the IT Ministry said that the addition of individual user posts was a "[c]larification of applicability" of those rules to "news and current affairs content hosted by non-publisher users".

> The amendments are clarificatory and procedural in nature and are intended to improve legal certainty, strengthen enforceability of Ministry directions, and ensure effective oversight of intermediary-hosted content, particularly news and current affairs
> MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY



In a statement, Internet Freedom Foundation (IFF), an Indian digital rights advocacy organisation, decried the proposal as a "massive expansion of unconstitutional censorship and regulatory power".

The Ministry said these "amendments are clarificatory and procedural in nature and are intended to improve legal certainty, strengthen enforceability of Ministry directions, and ensure effective oversight of intermediary-hosted content, particularly news and current affairs."

IFF pushed back on that claim, pointing to a key change in the proposal - an inter-departmental committee (IDC) to hear appeals against complaint outcomes, which broadened its mandate. "The original Rule 14(2) required the IDC to hear "complaints regarding violation or contravention of the Code of Ethics." "The amended version removes this requirement entirely.The IDC now hears: (a) grievances arising from decisions at Level I or II; or (b) "matters" referred to by the Ministry."

The government uses Section 79 of the IT Act, under which the IT Rules were notified, to warn social media platforms that content under a takedown notice, if retained, would lead to the loss of their safe harbour. Since February's amendment abruptly changed takedown timelines to retain safe harbour to two-three hours from 24-36 hours, Meta has been taking down more posts and accounts under such notices. Blocking orders that are more legally binding are issued under Section 69A.

IFF accused the Centre of trying to sidestep orders by the Madras and Bombay High Courts, which have stayed certain parts of the IT Rules. "The cumulative effect of the amendments to Rules 8 and 14 is to reconstruct the oversight machinery that the Bombay and Madras High Courts found constitutionally suspect, in a form designed to evade the interim orders," IFF said.

**Several notices**

The government has been increasingly issuing broad takedown orders in the past few weeks against posts and accounts that are anti-establishment, and ones that mocked Prime Minister Narendra Modi. Asked about the recent spurt in takedowns, IT Minister Ashwini Vaishnaw said that the Centre was targeting "AI-generated deepfakes" and "fake news".

### Key Provisions of the Proposed Amendment

### 1. Expansion of I&B Ministry's Purview

**The Shift:** The I&B Ministry can now issue direct takedown notices to individual users for posts related to "news and current affairs."

**The Goal:** The government classifies this as a "clarification" to ensure that news content, regardless of who posts it, follows the Code of Ethics.

**2. Reconstructing the Oversight Mechanism**

**Rule 14 & the Inter-Departmental Committee (IDC):** The amendment broadens the IDC's mandate. It can now hear "matters" referred to by the Ministry, even if they aren't formal complaints about the Code of Ethics.

**The Concern:** Critics argue this removes the "checks and balances" previously required for the IDC to intervene.

**3. Weaponizing "Safe Harbour" (Section 79)**

**Mechanism:** If social media platforms (Intermediaries like X or Meta) do not comply with government advisories, they risk losing their Safe Harbour protection.

**Impact:** Without Safe Harbour, platforms are legally liable for every piece of content posted by users, forcing them to become more aggressive in "proactive" censorship to avoid litigation.

**Critical Analysis for Mains**

**A. Constitutional Challenges (Article 19 vs. Section 69A)**

The Internet Freedom Foundation (IFF) argues that this is an "unconstitutional expansion." Under the Shreya Singhal vs. Union of India (2015) judgment, the Supreme Court struck down Section 66A of the IT Act for being vague. Critics argue these new rules similarly use "vague" terminology to curb dissent. Furthermore, by using Rule-making powers, the Centre is accused of bypassing the stricter judicial safeguards of Section 69A (which governs blocking orders).

**B. Executive vs. Judiciary**

The Bombay and Madras High Courts had previously stayed parts of the 2021 Rules, citing that the executive cannot act as the "judge, jury, and executioner" of digital content. This amendment appears to be an attempt to bypass those stays by re-categorizing the oversight machinery.

**C. The "Fake News" and "Deepfake" Dilemma**

From the government's perspective (as stated by IT Minister Ashwini Vaishnaw), these rules are essential to combat:

**AI-generated Deepfakes:** Which can destabilize social harmony.

**Information Warfare:** Preventing foreign or domestic actors from spreading coordinated misinformation under the guise of "individual posts."

**Ethical and Democratic Concerns**

**Chilling Effect:** When individuals know the Ministry can directly target their posts, they may self-censor, harming the "Marketplace of Ideas" essential for a democracy.

**Regulatory Overreach:** Treating a citizen with a smartphone the same as a professional news organization creates a disproportionate regulatory burden.

**Conclusion**

The proposed amendments reflect the government's intent to tighten the "digital borders" of India's information ecosystem. While the objective of curbing deepfakes and misinformation is legitimate, the methodology—expanding executive power over

individual speech—faces the risk of judicial scrutiny. A balanced approach would involve a statutory independent regulator rather than a government-controlled committee, ensuring that "reasonable restrictions" under Article 19(2) are applied transparently and fairly.

## UPSC Prelims Exam Practice Question

**Ques: Which of the following best describes "Safe Harbour" under Section 79 of the IT Act?**

(a) Legal immunity to individuals posting content online

(b) Protection given to intermediaries from liability for third-party content

(c) A mechanism for government censorship

(d) A provision to regulate OTT platforms

**Ans: (b)**

## UPSC Mains Exam Practice Question

**Ques:** Discuss the implications of expanding government oversight over individual social media users in India.

## Page 06 : GS II : Governance / Prelims Exam

After a significant delay due to the pandemic, the Census 2027 is set to commence on April 1, 2026. This exercise is unique as India's first "Digital Census," featuring self-enumeration and the inclusion of caste data. Beyond mere headcounts, the preliminary administrative data reveals a structural shift in India's landscape: a shrinking rural footprint and a rapidly expanding urban periphery.

# Earliest Census data set to be available in 2027; India has fewer villages than during Census 2011

**Vijaita Singh**
NEW DELHI

As Census 2027 is being conducted digitally, most of the data gathered during the process will be published in 2027, Mritunjay Kumar Narayan, Registrar-General and Census Commissioner of India, said on Monday.

He said the caste enumeration methodology for the second phase was yet to be finalised, and officials were studying multiple suggestions received on the subject.

Data shared by Census officials show that compared with Census 2011, there has been a decrease in the number of villages by over 1,000 and an increase in urban settlements – statutory towns and Census towns.

From Census 2011, the number of States and Union Territories increased by one to 36; districts from 640 to 784, an increase of 144; sub-districts by 1,102 – from 5,990 to 7,092; statutory towns by 1,087 – from 4,041 to 5,128; and census towns by 688 – from 3,892 to 4,580. The number of villages declined by 1,030, from 6,40,932 in 2011 to 6,39,902, according to the administrative unit data presented by the Commissioner.

Mritunjay Kumar Narayan, and Biswajit Das (Left) addressing the media on Census 2027 in New Delhi on Monday. SUSHIL KUMAR VERMA

Mr. Narayan said West Bengal was the only State that had not notified the Census process, and while deliberations were on with the State government, it had time till September 30 to carry out the exercise.

This would be the first digital Census, first to enumerate caste and first to allow a self-enumeration option to respondents. The data keyed in during self-enumeration would be verified by enumerators during door-to-door visit and the option was only available for residents living in India, he said, allaying concerns of data manipulation.

"As per the Census Act 1948, the Census data are confidential and the respondents are to answer to the best of their knowledge. Only aggregate data is released, an individual's data cannot be shared with States or even the judiciary and do not also come under the purview of the Right to Information Act (RTI). Census data cannot be used to provide reservation benefits to any individual," Mr. Narayan said, while addressing a press conference before the first phase of Census kicks off on April 1 in certain States. He said Census data were beyond the "scope of investigation."

**16 languages**

Mr. Narayan said the self-enumeration portal, available in 16 languages, would be live from April 1 to 15 for residents of the Andaman and Nicobar Islands, Goa, Karnataka, Sikkim, Odisha, Lakshadweep, Mizoram and the NDMC and Delhi Cantonment areas. Self-enumeration option would be available 15 days before the first phase of Census – the House Listing Operations (HLO) begins. The window for the first phase is April 1-September 30 for all States. The second phase – population enumeration where each individual's information in the household, such as religion, caste etc. would be asked, would be conducted in February 2027.

"People can use mobile phones and laptop to fill in the data," he said.

**Key Highlights & Data Analysis**

**1. The Changing Face of India (2011 vs. 2027)**

The administrative boundary changes provide a snapshot of India's internal reorganization and urbanization:

- **Urbanization Trend:** Statutory towns increased by 1,087, and Census towns by 688. This highlights "rurbanization"—where rural areas take on urban characteristics without formal municipal governance.

**Declining Villages:** A decrease of 1,030 villages suggests that many have been swallowed by expanding urban limits or merged due to administrative restructuring.

**Administrative Proliferation:** The creation of 144 new districts and over 1,100 sub-districts reflects a push toward decentralized governance and "bringing the government closer to the people."

**2. Technological Innovations**

**Digital-First Approach:** Use of mobile apps and a self-enumeration portal (in 16 languages) aims to reduce the "time lag" between data collection and publication.

**Data Integrity:** Self-enumerated data will be physically verified by enumerators to prevent manipulation, balancing convenience with accuracy.

**3. The Caste Dimension**

For the first time in post-independence India, the Census will enumerate Caste (Phase II, Feb 2027).

**Significance:** This addresses a long-standing demand from various political and social groups for accurate data to calibrate reservation policies and social justice schemes.

**The Catch:** The Registrar General clarified that Census data is confidential (Census Act 1948). It provides aggregate data, not individual records, meaning it cannot be used to verify an individual's eligibility for benefits but can guide macro-policy.

**Critical Commentary for Mains**

**A. Federal Challenges**

The mention of West Bengal not yet notifying the process highlights the federal friction often associated with the Census, especially when linked to sensitive issues like the National Population Register (NPR) or caste. Successful Census operations require seamless "Cooperative Federalism."

**B. Privacy vs. Policy**

The Registrar General's emphasis that Census data is beyond the scope of investigation and exempt from RTI is a crucial legal safeguard. In an era of data concerns, maintaining the "sanctity of the respondent's information" is vital to ensure people provide honest answers regarding sensitive topics like religion and caste.

**C. Economic Implications**

The 2027 Census will be the foundation for:

**Delimitation:** Future restructuring of Lok Sabha and Assembly constituencies.

**Finance Commission:** Devolution of taxes between the Centre and States based on updated population shares.

**Policy Targeting:** Updating the "denominator" for schemes like the NFSA (Food Security) which currently rely on outdated 2011 data.

**Conclusion**

Census 2027 is not just a demographic record; it is a socio-economic reset button for India. The shift toward a digital and caste-inclusive census promises more granular and timely data, which is essential for evidence-based policymaking. However, the success of this "Digital India" milestone will depend on bridging the digital divide during the enumeration process and navigating the complex political sensitivities surrounding caste and federal cooperation.

## UPSC Prelims Exam Practice Question

**Ques: Which of the following features are associated with Census 2027?**

1. Self-enumeration by citizens

2. Use of digital mobile applications

3. Inclusion of caste data

4. Replacement of physical verification entirely

**Select the correct answer:**

(a) 1, 2 and 3 only

(b) 2 and 4 only

(c) 1, 3 and 4 only

(d) 1, 2, 3 and 4

**Ans: a)**

## UPSC Mains Exam Practice Question

**Ques:** Explain how Census data plays a crucial role in governance and policy formulation in India. **(150 Words)**

## Page 07 : GS III : Science & Technology / Prelims Exam

As the "Second Space Age" accelerates, the focus of space sustainability is shifting from orbital debris (Kessler Syndrome) to atmospheric chemistry. A recent study published in Communications Earth & Environment has, for the first time, empirically tracked a metal vapor plume from a SpaceX Falcon 9 rocket reentry. This marks a critical turning point in understanding how "mega-constellations" like Starlink are not just crowding the stars but potentially altering the Earth's protective atmospheric layers.

The Falcon 9 upper stage re-entering the atmosphere above Berlin on February 19, 2025. AFP

*Falcon 9 reentry pollutes upper atmosphere*

Vasudevan Mukunth

The world is in the throes of a second Space Age, with space-based data and assets being increasingly integrated into terrestrial activities — from helping cars and ships find their way to predicting impending disasters. For this, various countries have launched thousands of satellites to orbit, with orders of magnitude more poised to launch in the coming years.

While this proliferation has raised concerns about orbital debris, scientists are increasingly also concerned about a different kind of fallout: the chemical pollution left behind when these objects burn up in the atmosphere.

Now, for the first time, researchers from Germany, Peru, and the U.K. have tracked a plume of metal vapour created by a Falcon 9 rocket reentering the atmosphere. Their findings, published in *Communications Earth & Environment*, confirm that space traffic is actively altering the chemistry of the atmosphere's uppermost reaches.

The study was driven by the rise of

**Researchers tracked metal vapour created by a Falcon 9 rocket reentering the atmosphere and their findings confirmed that space traffic is altering the chemistry of the atmosphere**

mega-constellations like Starlink, as part of which thousands of satellites are designed to de-orbit and burn up at the end of their five-year lifespans. When they do, they inject metals like aluminum and lithium into the mesosphere and lower thermosphere (MLT).

Scientists are concerned that this pollution could harm the ozone layer and change how the atmosphere traps heat.

On February 19, 2025, when the upper stage of a SpaceX Falcon 9 rocket made an uncontrolled re-entry over Europe, the researchers used a resonance lidar located in Kühlungsborn in Germany. The instrument fired a laser into the sky to measure the density of specific atoms nearly 100 km up.

To prove the connection to the rocket, the researchers combined a sophisticated atmospheric model with wind data from local meteor radars as they calculated backwards trajectories. This allowed them to trace the movement of air masses from the observation point in Germany back to the exact time and location where the rocket disintegrated. About 20 hours after the reentry, the lidar detected a surge in the number of lithium atoms at an altitude of 96 km — a concentration 10 times higher than natural levels.

Natural space dust, like that shed by meteors, contains very little lithium. In fact, the entire earth usually receives only about 80 g of natural lithium from space dust per day. But modern rockets and satellites use lithium-aluminum alloys for their hulls and lithium-ion batteries for power; a single Falcon 9 stage contains roughly 30 km of the metal.

The team's models showed the air mass had drifted 1,600 km from the west coast of Ireland, over which the rocket reentered, to the skies over Northern Germany. The team also checked for natural explanations such as geomagnetic storms and ionospheric interference.

As the mass of human-made objects re-entering the atmosphere begins to rival the mass of natural meteors, the ability to identify and track pollutants coming from the skies will be important. "The upper atmosphere, as the first part of the earth's environment impacted by re-entry, offers a valuable opportunity to observe ablated materials close to their source, before they undergo chemical transformation and atmospheric dispersion," the researchers wrote in their paper.

**Key Scientific Findings**

**1. The "Fingerprint" of Human Activity**

Researchers used Resonance LIDAR (Light Detection and Ranging) in Germany to detect an anomaly at an altitude of **96 km** (the Thermosphere/Mesosphere boundary).

- **The Discovery:** A surge in lithium atoms 10 times higher than natural background levels.
- **The Source:** Traced back 1,600 km to a Falcon 9 reentry over Ireland using backward trajectory atmospheric models.
- **Natural vs. Man-made:** Earth receives only about 80g of natural lithium from meteoric dust daily. In contrast, a single Falcon 9 stage contains approximately 30kg of lithium (from batteries and alloys).

**2. Material Ablation**

When satellites and rocket stages re-enter, they undergo ablation (vaporization due to friction). Unlike natural meteors, which are mostly silicate and magnesium, human-made objects inject high concentrations of Aluminum and Lithium into the Mesosphere and Lower Thermosphere (MLT).

**Critical Commentary for Mains**

**A. Threats to the Ozone Layer**

Aluminum oxide ($Al_2O_3$) particles resulting from satellite burn-ups act as catalysts for chlorine activation. This can lead to the depletion of the **Ozone layer** in the stratosphere. While the study observed the plume in the higher MLT region, these particles eventually settle into lower layers over years.

**B. Global Warming & Radiative Forcing**

The injection of metallic aerosols can change the "albedo" (reflectivity) of the upper atmosphere. By scattering or trapping heat differently than natural cosmic dust, these pollutants could introduce a new, unmodeled variable into **Global Climate Models**.

**C. The Mega-Constellation Paradox**

To avoid long-term space debris, companies like SpaceX design satellites to de-orbit and burn up completely after 5–7 years.

- **The Irony:** The solution for **Space Debris** (burning them up) has become a problem for **Atmospheric Pollution**.
- With tens of thousands of satellites planned for launch, the mass of human-made re-entry material will soon exceed natural meteoric flux.


**Policy and Regulatory Implications**

- **Lack of Global Standards:** Current international space treaties (like the Outer Space Treaty of 1967) focus on sovereignty and debris but do not regulate the chemical "exhaust" of re-entering hardware.
- **Environmental Impact Assessment (EIA):** There is an urgent need to include "Atmospheric Impact" in the pre-launch licensing process for space agencies (ISRO, NASA, ESA).
- **Technological Alternatives:** Research into wooden satellites (LignoSat) or different alloy compositions that produce less reactive oxides is gaining traction.

**Conclusion**

The Falcon 9 study serves as a "canary in the coal mine" for the space industry. While space-based data is essential for modern life and disaster management, the environmental cost can no longer be ignored. As India expands its footprint via Skyroot, Pixxel, and ISRO's commercial arm (NSIL), it must lead the conversation on "Green Space Access"—ensuring that the quest to connect the Earth does not end up damaging the very atmosphere that protects it.

**UPSC Prelims Exam Practice Question**

**Ques: The term "ablation" in the context of space science refers to:**

(a) Accumulation of debris in orbit

(b) Vaporization of objects due to friction during re-entry

(c) Emission of radiation from satellites

(d) Fragmentation of asteroids in space

**Ans: b)**

**UPSC Mains Exam Practice Question**

**Ques:** "The focus of space sustainability is shifting from orbital debris to atmospheric pollution." Critically analyze. **(250 Words)**

## Page : 09 : GS III : Indian Economy / Prelims Exam

The ongoing U.S.-Israel-Iran conflict has transcended military boundaries to become a direct economic challenge for India. With the OPEC basket price surging by 67% in a single month and threats to the Strait of Hormuz—a chokepoint for 20% of global oil—India's heavy reliance on fossil fuels is under the spotlight. The crisis reveals a "vulnerability gap" between India and China: while both are top oil importers, China's aggressive Electric Vehicle (EV) adoption has created a strategic buffer that India currently lacks.

# U.S.-Israel-Iran war puts India's EV gap in focus

While both India and China rely on oil supplies from West Asia, China's early EV adoption has made its transport sector less exposed to the fuel crisis

DATA POINT

Devyanshi Bihani

The surge in global oil prices after the U.S.-Iran war has exposed the differing levels of energy vulnerability in Asia's two largest economies, India and China. Since the conflict began on February 28, crude and refined fuel prices have increased rapidly, with the Organization of the Petroleum Exporting Countries (OPEC) basket price rising by about 67% between February 27 and March 27, pushing up petrol, diesel and LPG costs.

The rise in fuel costs has revived interest in alternatives such as Electric Vehicles (EVs), plug-in hybrids and electric two-wheelers, especially in countries that rely heavily on imported oil.

The war has also increased the risk of supply disruptions due to the closure of the Strait of Hormuz, through which about one-fifth of global oil supply normally passes. China received 5.4 million barrels of crude oil per day via the Strait in FY25Q1, the highest in volume. India followed at 2.1 million barrels per day. But while both countries depend on imported oil, China's faster adoption of EVs has reduced its transport sector's exposure to fuel shocks, whereas India's transport sector remains heavily reliant on fossil fuels.

Data on EV penetration show the scale of the gap between the two countries. In March 2026 alone, new-energy vehicles accounted for about 52.9% of passenger car sales in China, according to estimates by the China Passenger Car Association, while in India, EVs made up only about 6% of new car registrations in 2026 **(Chart 1)**.

Absolute sales numbers highlight the contrast. China sold about nine lakh new-energy passenger vehicles in March 2026 alone, whereas India registered about 72,000 electric cars in the last three months. In the two- and three-wheeler segment, China sold more than 72 lakh electric vehicles in 2024, while India's sales even in 2026 were only about 4.27 lakh **(Chart 2)**.

Because China began electrification earlier, the total number of EVs in use is far larger. China's electric car fleet had reached about 2.3 crore by 2024, compared with about 3.96 lakh in India in 2026. China had about 6.8 crore electric two- and three-wheelers in use, while India has about 23 lakh. Overall, India's total EV stock stood at about 27.3 lakh, still far below China's levels **(Chart 3)**.

Infrastructure and supply chains also reflect the gap. As of February 2026, India has about 14 electric cars per public charger, compared with roughly nine in China by the end of 2025, indicating higher charging availability which has allowed China to push EV adoption faster in the passenger vehicle segment **(Chart 4)**.

These differences have direct implications during oil crises. Countries with high EV adoption are less exposed to sudden increases in petrol and diesel prices because a larger share of transport runs on electricity.

The recent increases in fuel price across several Asian countries following the Iran conflict have strengthened the argument for accelerating the transition to electric mobility. The shift is already visible in the market. *Bloomberg* recently reported that demand for EVs has increased across Asia after the Iran oil shock, with Chinese carmakers such as BYD seeing higher showroom traffic as consumers shift away from fossil fuel-driven vehicles.

India has made progress, especially in electric three-wheelers, but adoption in cars and buses remains low and charging infrastructure limited, compared to China. As long as petrol, diesel and LPG remain the backbone of transport, every geopolitical conflict in West Asia will continue to be felt directly in Indian households.

## Electric gulf

China leads across the EV ecosystem with higher adoption, manufacturing, and charging infrastructure. India shows progress with respect to electric three-wheelers but faces gaps in scale, infrastructure, and supply chains

*2W: Two-wheeler*
*3W: Three-wheeler*
*4W: Four-wheeler*

**Low voltage:** An electric vehicle charging station at Freedom park in Bengaluru. ALLEN EGENUSE J.

**CHART 1:** A comparison of the share of electric vehicles in new-passenger car sales (in %)

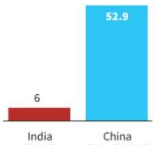



**CHART 2:** A comparison of absolute EV sales across the **four-wheeler (4W)** and **two- and three-wheeler** (2+3W) segments

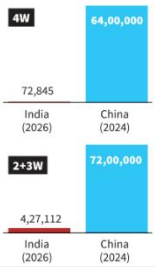
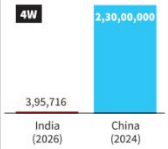



**CHART 3:** A comparison of the total number of electric vehicles in use



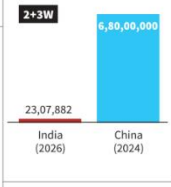




**CHART 4:** A comparison of the number of electric cars per public charger

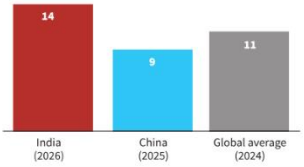
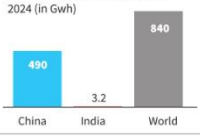
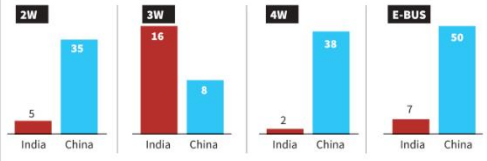



**CHART 5:** A comparison of electric vehicle battery demand across China, India and the world as of 2024 (in Gwh)




The data for the charts were sourced from the VAAHAN portal, National Energy Administration, China EV home, the International Energy Agency and the China Passenger Car Association

**CHART 6:** EV penetration rate across China, India, Europe and the U.S. in different vehicle segments in 2023 (in %)



**Comparative Analysis: The India-China EV Gap**

The following table summarizes the disparity in EV penetration as of early 2026:

| Metric | India (2026) | China (2026/Latest) |
|---|---|---|
| **Passenger EV Sales Share** | ~6% | 52.9% |
| **Total Electric Car Fleet** | ~3.96 Lakh | 2.3 Crore (2024) |
| **2W & 3W EV Sales** | 4.27 Lakh | 72 Lakh (2024) |
| **Public Charging Ratio** | 14 cars per charger | 9 cars per charger |

**1. Strategic Energy Security**

**Exposure:** India imports 2.1 million barrels/day via the Strait of Hormuz. High oil prices translate directly into **Imported Inflation**, widening the Current Account Deficit (CAD) and devaluing the Rupee.

**The "EV Buffer":** China's transport sector is increasingly "decoupled" from oil. Every EV on the road represents a reduction in the daily demand for refined petroleum, making their economy more resilient to West Asian shocks.

**2. Infrastructure and Ecosystem**

**Charging Density:** China's lower car-to-charger ratio (9:1) reduces "range anxiety," a primary hurdle for Indian consumers.

**Supply Chain:** China controls a significant portion of the global Lithium-ion battery supply chain, whereas India is still in the early stages of its Production Linked Incentive (PLI) schemes for Advanced Chemistry Cells (ACC).

**Critical Commentary for Mains**

**A. Geopolitical Risk as a Policy Lever**

The U.S.-Iran war serves as a "stress test" for India's energy policy. It proves that Energy Security is National Security. The volatility in the Middle East is no longer just a diplomatic concern but a direct threat to the Indian household budget (Petrol/LPG prices). This necessitates a shift from "gradual" to "mission-mode" EV adoption.

**B. The Three-Wheeler Success Story**

India's progress in Electric Three-Wheelers (E-Rickshaws) is a rare bright spot. This segment has seen high adoption because of "Total Cost of Ownership" (TCO) benefits. However, the article correctly points out that for a macro-impact, this success must be replicated in Public Transport (Buses) and Private Passenger Vehicles.

**C. Economic Implications of the Fuel Shock**

**Fiscal Pressure:** Rising oil prices may force the government to cut excise duties to shield consumers, leading to a higher **Fiscal Deficit**.

**Monetary Policy:** High fuel costs lead to "second-round effects" on food and manufacturing, making it harder for the RBI to manage inflation.

**Conclusion**

The Indo-Pacific and West Asian geopolitical shifts are forcing India to accelerate its Green Energy Transition. While programs like FAME (Faster Adoption and Manufacturing of Hybrid and Electric Vehicles) and the National Logistics Policy are steps in the right direction, the gap with China remains vast. To mitigate future shocks from the "Arc of Instability" in West Asia, India must prioritize decentralized charging infrastructure and secure long-term mineral partnerships (Lithium/Cobalt) to ensure that its transport sector is powered by the sun and wind rather than volatile foreign crude.

**UPSC Prelims Exam Practice Question**

**Ques: Which of the following best explains the term "Imported Inflation"?**

(a) Inflation caused by domestic demand

(b) Inflation due to rise in global commodity prices affecting imports

(c) Inflation due to fiscal deficit

(d) Inflation due to supply chain inefficiencies

**Ans: b)**

**UPSC Mains Exam Practice Question**

**Ques:** Discuss the role of electric vehicles in reducing India's vulnerability to external energy shocks. **(250 Words)**

# Page : 08 : Editorial Analysis

## A flame the state cannot guarantee

**Rahul Verma**

An independent researcher and sociology educator

The West Asian war-driven LPG disruptions reveal weaknesses in India's clean cooking system

India's LPG crisis that began in March 2026, following the war in West Asia, has sparked familiar diagnoses: disrupted Strait of Hormuz shipping lanes, heavy import dependence, and inadequate storage. These observations are accurate as far as they go. What these fail to explain is why a decade-long welfare programme, which connected 32.83 crore households to clean cooking fuel, offered almost no protection to these households when a single chokepoint was disrupted. The supply chain describes the trigger; the welfare architecture explains why it hit so hard – and that is the more consequential question.

The welfare programme, Pradhan Mantri Ujjwala Yojana, has provided 10.33 crore connections to women from below-poverty-line households since 2016, more than doubling national LPG coverage over a decade. The ambition was genuine and the relief measurable. The International Institute for Sustainable Development (IISD) found that women saved about an hour in a day on cooking and cleaning after accessing LPG – a real difference for millions who had spent generations cooking on biomass.

**Imperfections in a transition**

The problem is not what PMUY delivered but what it quietly replaced. Before LPG, kerosene arrived through the Public Distribution System. Inefficient and leaky, it was a command-distribution system where the state held physical stock and the ration card determined access. When the government phased out PDS kerosene and enrolled households into LPG as a clean energy upgrade, it was also withdrawing from direct supply responsibility. By 2024, 13 States had become kerosene-free and millions of households depended on a globalised commodity market that the state does not control. The transition substituted imperfect but directly administered supply for higher-quality market supply, without asking what would happen when that market failed. India imports about 60% of its LPG consumption and 90% of those imports pass through the Strait of Hormuz. India's Strategic Petroleum Reserves cover about 9.5 days of crude oil supply and are currently at 64% capacity, with no equivalent LPG-specific buffer. The state's ability to meet its clean cooking targets depends entirely on uninterrupted global commodity flows, while the welfare architecture – designed to scale uptake – was not built to ensure continuity under stress.

**Gaps in a sovereign responsibility**

The PMUY promise was built on visible markers of sovereign responsibility. Government branding on the cylinder, the Direct Benefit Transfer credit in the woman's account, and the scheme's naming after the Prime Minister – all signalling that the state was present and accountable. The war in West Asia and the LPG crisis exposes that communication and capacity were never aligned. The branding belonged to the state while the supply chain moved through markets and chokepoints that the state observed from a distance once the transition to LPG was complete. But when the Strait of Hormuz closes, the sovereign guarantee has no physical infrastructure behind it.

The cost of that misalignment is not distributed neutrally. One in four PMUY beneficiaries took only one refill or none at all in normal times, because refill costs exceeded what the subsidy covered for the poorest quintiles. With mandatory booking gaps at 45 days for rural areas and 25 days for urban areas and prices rising by ₹60 a cylinder in March, those households are the first to revert to biomass and the last to receive any relief when allocations tighten. Scheduled Caste and tribal households have 10% to 30% lower LPG access than upper-caste households, independent of income, partly because distributor networks in segregated rural geographies replicate caste hierarchies in how they allocate scarce supply. A war in West Asia activates those hierarchies.

The gendered dimension of this design flaw is equally structural. The scheme made women the formal beneficiaries of an entitlement while leaving its actual delivery entirely outside their control. The IISD found that in 74% of surveyed households, women made decisions on cooking energy sources. When LPG prices rose sharply, 14% said they would revert to biomass, leaving women to manage the shift without institutional support. Access framed as liberation from drudgery quietly restores it when supply fails and women carry that burden without institutional recourse.

None of this requires starting over. A two-month strategic LPG buffer, a statutory minimum of imports routed outside the Strait of Hormuz, and publicly available crisis protocols are design measures the current system has never implemented. Community biogas under Galvanizing Organic Bio-Agro Resources Dhan (GOBARdhan) with the Indian Biogas Association proposing a ₹10,000 per unit revival subsidy for five million dormant plants alongside accelerated piped gas for dense urban areas, provides targeted redundancy for the most exposed. A serious welfare architecture does not replace its primary delivery system when it comes under stress. Instead, it builds the redundancy underneath so that the stress never reaches the household.

**In perspective**

The deeper problem is that a decade of welfare expansion measured success in connections delivered and treated continuity under stress as a problem for another day. An entitlement that holds only in undisturbed markets is not durable by any standard worth defending. India extended clean cooking to hundreds of millions of its people and called it transformation. The question the war is now forcing is whether transformation built on unbroken global supply chains, without buffers, without triage rules and without alternatives, can honestly be called a guarantee at all.

**GS Paper III: Indian Economy**

**UPSC Mains Exam Practice Question:** Examine the intersection of energy access, social inequality, and gender in India's clean cooking fuel policies. **(150 Words)**

**Context :** The article argues that the current LPG crisis in India is not merely a supply-side failure caused by the West Asian war; it is a design flaw in the welfare architecture. While the Pradhan Mantri Ujjwala Yojana (PMUY) successfully

expanded access to 10.33 crore households, it replaced a state-controlled (though inefficient) kerosene system with a market-dependent LPG system. When global markets fractured, the "sovereign guarantee" of clean fuel vanished, leaving the most vulnerable to revert to toxic biomass.

**Core Themes & Critical Analysis**

**1. The "Kerosene-LPG Transition" Paradox**

**The Shift:** The state moved from being a direct provider (Kerosene via PDS) to a facilitator (LPG via markets).

**The Vulnerability:** PDS kerosene was a "command-distribution" system—the state held physical stocks. LPG, however, is a global commodity. 60% of India's LPG is imported, and 90% of those imports pass through the Strait of Hormuz.

**The Gap:** India has Strategic Petroleum Reserves for crude oil (~9.5 days), but no equivalent specific buffer for LPG.

**2. Social and Caste Stratification**

The author highlights that energy crises are not "neutral"; they follow existing social fault lines:

**Caste Hierarchy:** SC and Tribal households have 10–30% lower access to LPG. Distribution networks in rural areas often replicate social segregation, meaning these groups are the first to lose supply during a crunch.

**The "Refill" Problem:** For the poorest, the subsidy isn't enough. Even before the war, 25% of PMUY beneficiaries took one or zero refills due to high costs.

**3. The Gendered Burden**

**Liberation to Drudgery:** PMUY was marketed as liberating women from smoke and wood-gathering.

**The Reversion:** When prices spike or supply fails, 14% of households revert to biomass. This "quietly restores" the physical drudgery for women, proving that the welfare "guarantee" is conditional on market stability.

**Proposed Solutions: Building "Redundancy"**

The author suggests that a "serious welfare architecture" needs physical backups, not just digital credits:

**Strategic LPG Buffer:** Implementing a two-month physical stock of LPG (similar to crude oil reserves).

**Diversified Logistics:** Routing a statutory minimum of imports away from the Strait of Hormuz to bypass the chokepoint.

**GOBARdhan (Biogas):** Reviving the 5 million dormant community biogas plants. This provides a **decentralized, domestic alternative** that doesn't depend on global shipping.

**Piped Natural Gas (PNG):** Accelerating PNG in urban areas to free up LPG cylinders for rural heightening.

**Conclusion**

The 2026 LPG crisis serves as a lesson in Welfare Durability. Success in governance should not just be measured by "connections delivered" (outputs) but by "continuity under stress" (outcomes). A transformation built on an unbroken global supply chain without domestic buffers is a "fragile flame." For India to achieve true energy justice, it must bridge the gap between its political branding (the sovereign guarantee) and its physical infrastructure (the ability to deliver fuel during a war).