Currently — 3rd November 2026

1. **SC Permits Green Crackers in Delhi-NCR** | The Hindu | GS II, III
2. **Firecrackers: Festivity or Environmental Fallout?** | The Hindu | GS III
3. **AI Training Models and Privacy Risks** | The Hindu | GS II, III
4. **India's 500 GW Non-Fossil Energy Target** | The Indian Express | GS III
5. **Why Kuno's Collared Cheetahs Cannot Be Live-Tracked** | The Indian Express | GS III
6. **Britain's Slave Trade: Apology and Moral Responsibility** | The Hindu | GS IV

SC permits green crackers for two days in Delhi-NCR

The bursting of firecrackers constitutes a religious practice meant to celebrate Deepavali, the top court says; but allowing environmental degradation defeats the purpose of festivities, it observes

Krishnadas Rajagopal
NEW DELHI

Terming the bursting of firecrackers during Deepavali a "religious practice", which, if left unregulated, takes a heavy toll on the environment and on public health, the Supreme Court on Monday permitted their conditional use in the Delhi-National Capital Region (NCR) for the festival.

"Bursting of firecrackers, though constitutes a religious practice meant to celebrate the occasion, shall result in severe environmental pollution, especially air and noise, apart from the creation of solid wastes... Amongst human beings, children, disabled and the elderly people constitute the most vulnerable groups," a Bench of Justices M.M. Sundresh and Prasanna B. Varale observed in an order.



The court permitted the bursting of certified green firecrackers from 6 a.m. to 7 a.m. and 8 p.m. to 10 p.m. on November 7 and 8 in Delhi-NCR.

"There shall not be any bursting of fireworks within a 300-metre radius of hospitals, nursing homes, primary and district health centres, old age homes, and any notified silence zones. These areas will be declared 'no-cracker zones', and shall be marked on the ground and published," the court said in the 23-page order.

The same restriction would be applicable to educational institutions.

"We are conscious that the celebration of Deepavali has a religious, social, psychological, and emotional connotation amongst people, creating a positive atmosphere of hope, welfare and prosperity. That being said, allowing the environment to degrade, which results in a health hazard to all the living beings, defeats the very purpose of the festivities, and the celebrations would be rendered nugatory," the Bench reasoned.

CONTINUED ON
» PAGE 10
FESTIVITY OR FALLOUT?
» PAGE 7

SC allows green crackers for 2 days in Delhi-NCR

The festival ushered in joy and prosperity to every individual for centuries. However, even ancient Hindu scriptures, including the *Skandapurana* and the *Padmapurana* referred to the use of only lamps as a ritual during Deepavali.

"With the introduction of gun powder in India a few centuries ago, the celebration underwent a change. This led to the introduction of bursting firecrackers," the court noted.

The unregulated use of firecrackers during the Diwali in the modern day had chronically led to a huge spike in the Air Quality Index (AQI), as well as pollution levels,including the release of particulate matter, the court said. In graphic detail, the court explained how microscopic particulate matter enters the usually resilient human body to cause "substantial damage".

The Bench stressed that the right to practice, profess and propagate religion conferred under Article 25(1) of the Constitution was "certainly subject to public order, morality, health". The right to life under Article 21 included the right to a healthy, safe and pollution-free environment.

"The right of an individual to engage in a partic-

1. Supreme Court Permits Green Crackers for Two Days in Delhi-NCR

GS Paper III – Environment | Air Pollution and Environmental Governance

Context: The Supreme Court conditionally permitted certified green crackers in Delhi-NCR on **7 and 8 November**, between **6–7 a.m. and 8–10 p.m.**, balancing religious freedom with the right to a healthy and pollution-free environment.

1. Green Crackers: Meaning and Types

Green crackers are specially formulated firecrackers designed to reduce particulate emissions and harmful pollutants compared with conventional crackers.

1. **SWAS (Safe Water Releaser):** Releases water vapour to suppress dust and reduce particulate emissions.
2. **SAFAL (Safe Minimal Aluminium):** Uses reduced aluminium content to lower emissions.
3. **STAR (Safe Thermite Cracker):** Uses modified chemical formulations to reduce emissions.

2. Supreme Court's Key Directions

1. Permitted certified green crackers only on the specified dates and during the prescribed timings.
2. Prohibited bursting within 300 metres of hospitals, educational institutions, nursing homes, courts and notified silent zones.
3. Prohibited joined firecrackers (Ladis) and garlands.
4. Required product-specific QR codes for identification.
5. Prescribed conditions for manufacturing, sale and temporary restoration of eligible traders' licences.

3. Constitutional Provisions

1. **Article 21:** Right to life includes the right to a healthy and pollution-free environment.
2. **Article 25:** Freedom of religion is subject to public order, morality and health.
3. **Article 48A:** Directs the State to protect and improve the environment.
4. **Article 51A(g):** Makes environmental protection a fundamental duty of citizens.

4. Role of the Supreme Court in Environmental Governance

1. **Constitutional protection:** Interprets Article 21 to include environmental protection.

2. **Environmental principles:** Applies the Precautionary Principle, Polluter Pays Principle and Absolute Liability.
3. **Judicial intervention:** Directs governments and industries to prevent and remedy environmental degradation.
4. **Accountability:** Holds polluters responsible for environmental damage and restoration.
5. **Balancing rights:** Reconciles religious freedom and economic activities with public health and environmental protection.

5. Landmark Supreme Court Judgments

Judgment	Important contribution
M.C. Mehta v. Union of India (1987) – Oleum Gas Leak Case	Established Absolute Liability.
M.C. Mehta v. Union of India (1988) – Ganga Pollution Case	Directed action against polluting industries.
Vellore Citizens Welfare Forum v. Union of India (1996)	Recognised Precautionary Principle, Polluter Pays Principle and Sustainable Development.
Indian Council for Enviro-Legal Action v. Union of India (1996)	Polluters must bear the cost of environmental restoration.
T.N. Godavarman Thirumulpad v. Union of India (1996)	Expanded the interpretation of forests and strengthened forest conservation.
Arjun Gopal v. Union of India (2018)	Restricted firecrackers to address air pollution and protect public health.

6. UPSC Mains PYQ

GS II – 2022 | 10 Marks

“The most significant achievement of modern law in India is the constitutionalization of environmental problems by the Supreme Court.” Discuss this statement with the help of relevant case laws.

7. UPSC Prelims PYQ

UPSC Prelims 2018 – National Green Tribunal (NGT) and Central Pollution Control Board (CPCB)

Consider the following statements:

1. NGT has been established by an Act, whereas CPCB has been created by an executive order.
2. NGT provides environmental justice, while CPCB promotes cleanliness of streams and wells and improves air quality.

Answer: Statement 2 only.

Explanation: NGT was established under the National Green Tribunal Act, 2010. CPCB was constituted under the Water (Prevention and Control of Pollution) Act, 1974.

Firecrackers: Festivity or fallout?



Sincy Wilson

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Vaishali R. Venkat

The smoke that wafts through our celebrations carries a hidden cost. How can society preserve the joy of celebration without compromising the right to breathe clean air?

On October 12, the Supreme Court's *suo motu* hearing on air pollution in Delhi-NCR brought firecracker restrictions, religious sentiments, and public health into focus. Citing enforcement difficulties, the Bench cautioned against a blanket ban and emphasised public awareness and voluntary restraint to encourage the use of less-polluting alternatives.

Senior advocate Aparajita Singh, the amicus curiae in the matter, urged the Court to ask the Commission for Air Quality Management (CAQM) to address the medical risks associated with air pollution. The proceedings raise a larger constitutional question: how can environmental protection be reconciled with religious freedom without compromising either public health or lawful cultural practice?

Article 21 of the Constitution provides that no person shall be deprived of their life or personal liberty, except according to the procedure established by law. As interpreted by the Supreme Court, the right to life encompasses the right to healthy life. Articles 48A and 51A(g) reinforce this very principle by placing environmental protection within the framework of the Directive Principles of State Policy and Fundamental Duties, respectively. While Article 48A directs the State to protect and improve the environment and safeguard forests and wildlife, Article 51A(g) makes environmental protection a fundamental duty of every citizen. Further, Article 25 guarantees every person freedom of conscience and the right to profess, practise, and propagate religion, subject to public order, morality, and health, among other constitutional limitations. Thus, religious freedom and the freedom to celebrate cannot be treated as an automatic licence to expose others to unreasonable risks to their health. The challenge is not to pit celebration and clean air in opposing camps, but to ensure that the enjoyment of one's freedom does not diminish another's ability to live in a healthy environment.

Environmental protection also demands collective action by governments, institutions, and individuals alike. This understanding of shared environmental responsibility extends beyond national constitutions and finds expression in international environmental principles. For instance, the Stockholm Declaration of 1972 recognised that human well-being is intertwined with environmental quality. The Rio Declaration of 1992 articulated two principles that remain pivotal to environmental policymaking: the precautionary principle, which calls for preventive action by the State against serious environmental risks even when scientific certainty is incomplete, and the polluter-pays principle that suggests that the polluter bears the cost of pollution. Applied to the firecracker debate, these principles bring two core concerns into focus: preventing environmental harm and ensuring that those responsible for pollution bear the cost.

The Universal Declaration of Human Rights (UDHR) and the International Covenant on Civil and Political Rights (ICCPR) recognise religious freedom. Moreover, across the globe, countries adopt different approaches to firecracker regulation to protect public safety. For instance, Singapore has banned private firecracker use, permitting only licensed professional fireworks displays. Ireland and the United Kingdom prohibit the sale of traditional firecrackers to the general public. Sweden prohibits the use of firecrackers except by trained individuals holding special permits. Under Germany's explosives regulations, certain powerful firecrackers are restricted to authorised permit holders.

India need not choose between two extremes: a blanket ban and unrestricted use. Regulation can be designed to prevent harm while respecting lawful celebration. This requires scientifically assessing alternatives such as certified green crackers, enforcing emission and safety standards, and holding manufacturers and sellers accountable for violations. The State must ensure that restrictions are proportionate and effectively implemented, while citizens exercise their freedoms with due regard for public health.

After all, a celebration should leave behind memories of joy, not a legacy of polluted air.

Religious freedom and freedom to celebrate cannot be treated as an automatic licence to expose others to unreasonable risks to their health

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2. Firecrackers: Festivity or Environmental Fallout?

GS Paper III – Environment | Environmental Governance and Sustainable Development

Context: The debate over firecrackers highlights the challenge of balancing religious and cultural celebrations with public health and the constitutional right to a clean environment.

1. Constitutional and Legal Balance

1. **Article 21:** The right to life includes the right to a healthy environment and clean air.
2. **Article 25:** Freedom of religion is subject to public order, morality and health.
3. **Articles 48A and 51A(g):** Make environmental protection a responsibility of both the State and citizens.

2. Environmental Principles

1. **Precautionary Principle:** Prevent environmental damage even when scientific evidence is incomplete.
2. **Polluter Pays Principle:** Those responsible for pollution must bear the cost of environmental damage and restoration.
3. **Sustainable Development:** Balance cultural and economic activities with environmental protection.
4. **Intergenerational Equity:** Protect environmental resources for present and future generations.

3. Role of the Supreme Court

The Supreme Court acts as a constitutional guardian of environmental rights by interpreting Article 21, enforcing environmental principles, holding polluters accountable and balancing religious freedom with public health.

4. International Practices

1. **Singapore:** Restricts private firecracker use and permits authorised professional displays.
2. **United Kingdom and Ireland:** Restrict the sale and use of traditional fireworks.
3. **Sweden:** Restricts certain fireworks to trained individuals.
4. **Germany:** Regulates powerful fireworks through authorisation requirements.

5. Way Forward

1. **Scientific alternatives:** Promote certified green crackers and less-polluting technologies.

2. **Effective regulation:** Enforce emission standards and restrictions on hazardous fireworks.
3. **Accountability:** Make manufacturers, sellers and violators responsible for environmental damage.
4. **Public participation:** Encourage awareness, voluntary restraint and environmentally responsible celebrations.
5. **Balanced governance:** Adopt proportionate regulations that protect cultural traditions without compromising public health and environmental rights.

How AI training models could compromise privacy



Tulika Avni Sinha

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The right to privacy is a constitutional right upheld by the Supreme Court in 2017. However, the legal instruments currently in place to safeguard this right seem inadequate, especially considering the technological revolution led by Artificial Intelligence (AI) around the world. While AI regulation is one of the most commonly discussed issues within governments today, the recommendations have been broad, vague and have only led to further questions. AI has immense potential to boost productivity and have positive effects on people's lives; any indiscriminate regulatory or policy measure risks inhibiting innovation and economic growth. However, there are lower hanging fruits; specific gaps that can be filled to better safeguard people's constitutional rights without permanently losing out in the AI race.

Privacy coverage

The Digital Personal Data Protection (DPDP) Act was passed in 2023, with the DPDP Rules being notified in November 2025. The implementation is phased with some provisions on consent and safety becoming effective only in 2027. Prior to the DPDP Act, the primary legal instrument to regulate the use and management of personal data was the Information Technology (IT) Act, 2000. Together the IT Act, 2000 and its 2011 Rules broadly regulated the export of "sensitive personal data" on the condition that the recipient ensured a level of data protection required under Indian law, and that the transfer was either necessary to perform a lawful contract or had been consented to by the data provider. An assertion and claim were sufficient to record adequacy. The criminal penalty for unauthorised disclosure was capped at three years' imprisonment or a fine of ₹5 lakh. These penalties only applied to disclosure of sensitive personal data that were listed in the Rules such as financial data, medical or health details, sexual orientation, biometric information etc. The Rules did not apply to personal data such as names, addresses, phone numbers, caste, religion, political affiliations, browsing history, social media activity, online or offline behavioural patterns, institutional affiliations etc.

It also did not apply to any data scraped publicly such as from social media platforms. For context, India is the largest market for Facebook and Instagram in the world. Tech giants such as Meta, Amazon, and Google use data collected from the users to train their AI models.

Credible studies have shown that querying an AI model with 'anonymised' data to extract personal details that it had memorised during training can be used to identify individuals and build their profiles

The DPDP Act is now the general purpose legal instrument to regulate the use of citizens' data. Yet it does not apply to publicly available data or information inferred from parameters such as social media activity including names, gender/sex, locations, institutional affiliations, images, videos or attributes. Such 'inferred' data could include emotions, mobility, and behavioural patterns. It buckets all personal data together and does not create a specific category for sensitive personal data as was followed under IT Act, 2000. Consequently, data that are intuitively sensitive such as passwords and mental and physical health conditions are treated in the same bucket as name, marital status, city, shopping interests etc. When viewed in this light, it seems that the DPDP Act is regressive and fails to assign stronger protections to categories that were better protected earlier. It can be a valid critique to say that even personal non-sensitive data can reveal sensitive information depending upon the context of their collection and accompanying parameters in analysis. However, some data points, when revealed, stand the risk of being severely misused and encroach upon individual privacy without the need for any inference such as biometrics, passwords etc. They need higher levels of protection.

Training AI on personal data

Further, the DPDP Act does not acknowledge or engage with the topic of AI models and data used in their training. One of the risks of AI models to privacy is that they can regurgitate the data used in their training. Credible studies have shown that querying an AI model with "anonymised" data to extract personal details that it had memorised during training can be used to identify individuals and build their profiles. Studies have also shown that various methods can be used via AI to extract sensitive information about individuals using generic publicly available information. This means that if your data was used to train an AI model, an anonymised dataset that is now legally compliant can be used to extract your personal details and profile you without your consent.

It is important to note that Indian users have not had a right or a legal mechanism to prevent this use in the past. Since DPDP's consent provision is only effective next year, companies do not need to fully comply and obtain one's consent with respect to its data processing needs now. Worse, even after the DPDP's substantive provisions take full effect in May 2027, Indian users will have no right to object to AI being trained on their public data. In contrast, Meta currently provides its users in the EU an opt-out feature that allows the user to object to their data being used in Meta's AI training.

This also needs to be juxtaposed with the fact that the right to be forgotten under the DPDP Act only applies to data for which the user had provided consent to the organisation. It is unclear if the right extends to the information inferred from the analysis of the said data. The DPDP Act also exempts this right from processing for research, archival, or statistical purposes. The conditions to be met under such an exemption still need to be prescribed by the Union government. Whether AI model training (often framed by companies as research to improve service delivery) falls within this exemption remains unclear and is, therefore, a potential route by which such processing could escape the Act's obligations entirely.

What can be done

These are low hanging fruits and can be addressed with amendments, notification of Rules and legal judgments. The provisions of the DPDP Act must apply to data used for training AI models. Further, it should provide people with a right to object to that use, and enforce protections on publicly scrapped data and the information inferred from that data. It should also strengthen the right to erasure so that the responsibility falls on the companies to inform the users of every entity that holds their data. The DPDP Act should also clarify whether AI training is included under research exemption by default; and create a sensitive data category with stricter provisions of use and processing. There are definite trade-offs between development objectives and privacy safeguards and the extent of the adoption can follow that prioritisation.

Having said that, these are not non-urgent concerns. They are backed by documentation and acknowledgement from companies and the government. There have been numerous discussions on India being an exporter of its data for AI training. The solution is not to prevent the export or to ban personal information from AI training, which can worsen AI outcomes on inclusion, efficiency, discrimination and bias for the Indian population.

India is staged to be the use case hub of the world – AI is being deployed by corporate giants, MSMEs, and even not-for-profits across sectors. The more we delay closing gaps on privacy, the weaker the constitutional right becomes.

3. How AI Training Models Could Compromise Privacy

GS Paper II: Polity and Governance – Right to Privacy and Data Protection
GS Paper III: Science and Technology – Artificial Intelligence

Context: The use of personal and publicly available information to train Artificial Intelligence (AI) models raises concerns about data privacy, individual consent and the adequacy of India's data protection framework.

1. How AI Training Threatens Privacy

1. **Data extraction:** AI models may reproduce personal information contained in their training datasets.
2. **Re-identification:** AI can combine anonymised information from multiple sources to identify individuals.
3. **Sensitive profiling:** Ordinary digital information, such as location and online activity, can be used to infer sensitive personal details.
4. **Lack of consent:** Individuals may be unaware that their publicly available information is being collected and used for AI training.
5. **Difficulty in erasure:** Removing personal information from an already-trained AI model can be technically challenging.

2. Gaps in India's Data Protection Framework

1. **Earlier framework:** The Information Technology Act, 2000 and the 2011 Sensitive Personal Data or Information Rules primarily addressed specified categories of sensitive data, leaving wider categories of personal information inadequately protected.
2. **Publicly available data:** The Digital Personal Data Protection (DPDP) Act, 2023 excludes certain personal data made publicly available by individuals or under legal obligations. This raises concerns about large-scale data scraping for AI training.
3. **Inferred information:** The Act's application to sensitive information inferred by AI through the combination of different data points remains a concern.
4. **Consent and control:** Individuals may have limited control over the use of their information for AI training and may lack effective options to object.
5. **Research exemption:** Exemptions for research, archiving and statistical purposes require safeguards against misuse.

3. Constitutional and Legal Framework

1. **Article 21:** The right to privacy is part of the Right to Life and Personal Liberty.
2. **Justice K.S. Puttaswamy v. Union of India (2017):** The Supreme Court recognised privacy as a Fundamental Right.
3. **DPDP Act, 2023:** Establishes India's statutory framework for processing digital personal data.
4. **DPDP Rules, 2025:** Provide the rules for implementing the Act through a phased framework.

4. Way Forward

1. Establish clear safeguards for personal data collected from public sources and used for AI training.
2. Ensure transparency about data collection, processing and use, along with meaningful consent and objection mechanisms.
3. Protect individuals against sensitive profiling, re-identification and misuse of inferred information.
4. Develop effective mechanisms to address erasure requests and prevent AI models from reproducing personal information.
5. Clarify research exemptions and fix accountability for misuse of personal data.

The objective should be to balance AI innovation with the constitutional values of privacy, dignity and individual autonomy.

5. UPSC Mains PYQs

GS Paper II, 2024 (15 Marks)
"Right to privacy is intrinsic to life and personal liberty and is inherently protected under Article 21 of the Constitution. Explain. In this reference, discuss the law relating to DNA testing of a child in the womb to establish its paternity."

GS Paper II, 2017 (15 Marks)
"Examine the scope of Fundamental Rights in the light of the latest judgement of the Supreme Court on Right to Privacy."

6. UPSC Prelims PYQs

2021: Right to Privacy is protected under which Article of the Constitution?

Answer: Article 21.

2018: Which provisions of the Constitution imply that the Right to Privacy is intrinsic to the Right to Life and Personal Liberty?

Answer: Article 21 and the freedoms guaranteed under Part III.



PM Narendra Modi during the Bharat Renewable Energy Summit and Expo 2026 at Bharat Mandapam in New Delhi on Monday. ANI

PM: India to add 500 GW non-fossil fuel capacity in the next 10-11 years

Pratyush Deep
New Delhi, November 2

INDIA WILL add 500 gigawatts

generation capacity of 558.89 GW, according to data from the Central Electricity Authority.

Modi said that investments

4. India’s Clean Energy Transition: 500 GW Non-Fossil Capacity and Energy Security

GS Paper III – Environment: Renewable Energy, Climate Change and Sustainable Development

Context: Prime Minister Narendra Modi highlighted India’s progress in clean energy and announced an ambition to add another 500 GW of non-fossil fuel capacity over the next 10–11 years.

1. India’s Non-Fossil Energy Status: Key Data

Indicator	Data
Total installed power generation capacity	558.89 GW
Installed non-fossil fuel capacity	308 GW
Share of non-fossil sources	55.1%
Existing non-fossil capacity target by 2030	500 GW
Additional capacity expansion announced	500 GW over 10–11 years
Renewable energy investment over the past decade	Over $164 billion
Investment since RE-INVEST Summit 2024	Over $63 billion

Potential investment opportunities by 2030	Over ₹20 lakh crore

2. India’s Achievements and Climate Commitments

1. **Paris Agreement:** India achieved 50% of its installed electricity capacity from non-fossil sources in 2025, five years ahead of its 2030 target.
2. **COP26 commitment:** India pledged to achieve 500 GW of non-fossil fuel capacity by 2030.
3. **Global position:** India is among the world’s leading countries in solar and renewable energy.
4. **Future expansion:** India is pursuing its existing 500 GW target for 2030 while aiming to add another 500 GW over the next 10–11 years.

3. Major Government Initiatives

1. **PM-KUSUM:** Promotes solar-powered irrigation pumps and decentralised solar energy for farmers.
2. **PM Surya Ghar: Muft Bijli Yojana:** Promotes rooftop solar installations in residential households.
3. **National Green Hydrogen Mission:** Promotes green hydrogen production, targeting 5 million metric tonnes annually by 2030.
4. **Green Energy Corridors:** Develop transmission infrastructure to integrate renewable electricity into the national grid.
5. **Domestic Manufacturing:** Expansion of solar module and solar cell manufacturing capacity strengthens India’s renewable energy supply chain.

4. Investment and Economic Opportunities

1. More than $164 billion has been invested in India’s renewable energy sector over the past decade.
2. Over $63 billion in investment has been attracted since RE-INVEST Summit 2024.
3. Investment opportunities exceeding ₹20 lakh crore are expected by 2030.
4. Renewable energy expansion can promote domestic manufacturing, technological development, infrastructure and green employment.

5. Environmental Significance and Energy Security

1. **Decarbonisation:** Greater use of non-fossil energy can reduce greenhouse gas emissions.
2. **Energy security:** Domestic renewable energy can reduce dependence on imported fossil fuels and exposure to geopolitical disruptions.

3. **Climate commitments:** Supports India's commitments under the Paris Agreement and transition towards a low-carbon economy.
4. **Sustainable agriculture:** Solar-powered irrigation can reduce dependence on diesel-based pumps and conventional electricity.
5. **Clean energy transition:** Renewable energy, supported by storage and modern transmission infrastructure, can help meet India's growing electricity demand sustainably.

6. Major Challenges

1. **Intermittency:** Solar and wind generation depends on weather conditions and time of day.
2. **Energy storage:** Affordable battery storage and other storage technologies are necessary to ensure reliable electricity supply.
3. **Transmission infrastructure:** Renewable energy generation centres require stronger transmission networks to reach consumption centres.
4. **Import dependence:** Domestic manufacturing of solar cells, batteries and critical components needs further strengthening.
5. **Land and biodiversity:** Large renewable energy projects must address land-use conflicts and ecological concerns.

7. UPSC Prelims Previous Year Questions (PYQs)

Q1. UPSC Prelims 2016

'Net metering' is sometimes seen in the news in the context of promoting:

(a) Production and use of solar energy by households/consumers
(b) Use of piped natural gas in household kitchens
(c) Installation of CNG kits in motor cars
(d) Installation of water meters in urban households

Answer: (a) Production and use of solar energy by households/consumers.

Explanation: Net metering allows households with rooftop solar panels to supply surplus electricity to the grid and adjust it against the electricity they consume.

Q2. UPSC Prelims 2016

Consider the following statements:

1. The International Solar Alliance was launched at the United Nations Climate Change Conference in 2015.
2. The Alliance includes all the member countries of the United Nations.

Which of the statements given above is/are correct?

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Answer: (a) 1 only.

Explanation: The International Solar Alliance (ISA) was launched by India and France at the 2015 Paris Climate Conference (COP21). At the time of the question, its membership was not open to all United Nations member countries.

• WILDLIFE

Why collared Kuno cheetahs cannot be live-tracked

Anand Mohan J
Bhopal, November 2

SATELLITE COLLARS fitted on cheetahs are not a live telecast and cannot provide continuous live tracking, Kuno National Park Director Uttam Kumar Sharma has said. The explanation comes as the state government has suspended six forest department officials in connection with the death of KNG22, a male cheetah who was found seriously injured in the Sheopur territorial forest division on October 25 and died during treatment.

How collars work

In his note posted on social media, Sharma sought to explain the limitations of satellite-based wildlife monitoring, saying that a satellite location only provides the geographical position of an animal at a particular point in time. By the time the information reaches the monitoring team and personnel reach the reported location, the animal may have moved several kilometres away.

"Therefore, let us get rid of the misconception that a satellite-collared animal is available for continuous live tracking, like a live television broadcast," Sharma wrote.

At Kuno, monitoring teams track around 15 cheetahs through a combination of satellite collars and radio receivers. Satellite collars provide location information over large and often inaccessible areas, while very high frequency (VHF) equipment is used by field teams to locate animals more precisely on the ground.

5. Project Cheetah: Satellite Tracking and Wildlife Conservation

GS Paper III – Environment: Wildlife Conservation, Biodiversity and Species Reintroduction

Context: The death of KNG22 at Kuno National Park highlighted the technological and operational challenges involved in monitoring reintroduced cheetahs.

Five Important Points

1. Cheetah: Basic Profile

- Scientific name: *Acinonyx jubatus*.
- Family: Felidae.
- African cheetah: Vulnerable (IUCN).
- Asiatic cheetah: Critically Endangered (IUCN).
- Cheetahs became extinct in India in 1952.

2. Project Cheetah

- Launched in 2022 to reintroduce African cheetahs into India.
- Cheetahs were brought from Namibia and South Africa.
- Kuno National Park, Madhya Pradesh, was the first reintroduction site.

3. Satellite Collar Technology

- Collars transmit geographical location data at scheduled intervals, generally every six hours, rather than providing continuous live tracking.
- Each collar costs approximately ₹4–5 lakh.
- Very High Frequency (VHF) radio receivers are also used by field teams to locate animals on the ground.

4. Major Challenges in Cheetah Tracking

- **Signal obstruction:** Dense vegetation, rocky terrain, caves and valleys can affect GPS accuracy and satellite communication.
- **Movement:** Cheetahs travel around 6–8 km daily and may cover 12–15 km or more.
- **Delayed information:** By the time field teams receive and act on a location update, the animal may have moved considerably.
- **Difficult terrain:** Ground teams cannot always follow the animal's direct route, making physical tracking time-consuming.

- **Battery limitations:** Frequent transmission improves monitoring but can reduce collar battery life.

UPSC Prelims PYQs

2024: Consider the following statements:

1. Lions do not have a particular breeding season.
2. Unlike most other big cats, cheetahs do not roar.
3. Unlike male lions, male leopards do not proclaim their territory by scent marking.

How many of the statements given above are correct?

Answer: Two statements (1 and 2).

2012: Which of the following are naturally found in India?

1. Black-necked crane
2. Cheetah
3. Flying squirrel
4. Snow leopard

Answer: 1, 3 and 4 only.

Additional Prelims Linkage – M-STrIPES

M-STrIPES (Monitoring System for Tigers – Intensive Protection and Ecological Status) is a technology-based system used for tiger monitoring and protection in India's tiger reserves. It uses GPS-based patrol monitoring and ecological data to support wildlife conservation.

Britain open to apologising for slavery, says PM Burnham

Sriram Lakshman
LONDON

U.K. Prime Minister Andy Burnham has said his government is open to the idea of formally apologising for Britain's historical role in the slave trade, although he ruled out financial reparations.

Mr. Burnham set out his position in an opinion piece in *The Guardian* on Friday, ahead of the Commonwealth Heads of Government Meeting (CHOGM) in Antigua and Barbuda, next week. There have, for long, been calls for Britain to apologise and offer reparations for slavery and its colonial past, including in India.

Some 3 million Africans were transported as slaves to work on plantations in Britian's colonies in the Americas. Britain began abolishing the slave trade in its empire in 1807. Slavery was abolished in 1833 though not all slaves were freed until 1838. Britain "compensated" slave owners to a total sum of £20 million or 40% of the government's annual budget in 1833.

"Manchester's cotton industry was built on the labour of enslaved people," wrote Mr. Burnham, the former Mayor of Manchester. He acknowledged the calls from affected countries for a dialogue on slavery. "By sticking our heads in the sand, we have damaged the ability of the Commonwealth to function," he said.

Mr. Burnham said the U.K. was "offering structured dialogue with those affected by the transatlantic slave trade".

"Listening to calls for a formal apology on behalf of the British state will form an important part of this process, and I am open to them," he added.

Calls for Britain to make amends for its past have grown louder in recent days as King Charles III tours the Caribbean on his way to the CHOGM. The King is the titular head of the Commonwealth. In the Bahamas this week, King Charles acknowledged the "great suffering and injustices of the past", stopping short of an apology. Buckingham Palace has said it was up to the U.K. government to decide whether or not to apologise.



British Prime Minister Andy Burnham pushed back against the notion of financial reparations for victims of slavery. REUTERS

Barbadian Prime Minister Mia Amor Mottley welcomed Mr. Burnham's statement, even as she acknowledged that "views differ" on reparations. The British Monarch was the titular Head of State of Barbados until 2021, when the country became a republic. Once slavery was abolished, a system of indentured labour grew in the colonies between 1838 and 1917. Some 2 million men, women and children from India were shipped across the British Empire, from the Caribbean to South Africa, to work on plantations.

Historical wrongs

Mr. Burnham pushed back against the notion of financial reparations for victims of slavery, saying the British people could not be held responsible for historical wrongs "however heinous", that happened in a different age and under different legal circumstances, in which they did not play any part.

Instead, Mr. Burnham announced that former Prime Minister Gordon Brown would head a debt restructuring initiative for some of the poorest countries in the Commonwealth.

Cities like Manchester continued to grow after the abolition of slavery as the British empire consolidated its grip on the markets of its colonies, notably India, which became a supplier of raw cotton to the mills of Manchester, Liverpool, Glasgow and other areas.

Author and Lok Sabha MP, Shashi Tharoor, who has written on British colonialism in India, has been one of those calling for an "atonement" by the U.K. for its past. Mr. Tharoor has previously suggested that a symbolic annual sum of £1 per year be paid to India, for 200 years, as part of this.

"I have long argued that whatever reparations are offered by Britain, no credible figure is payable and no payable figure is credible. But moral atonement for the ravages of colonialism is indispensable," Mr. Tharoor told *The Hindu* on Saturday, when asked for a reaction to the Burnham piece and debate around reparations.

Mr. Tharoor welcomed Mr. Burnham's willingness to formally apologise for slavery but criticised the Prime Minister's omission of a larger apology for colonialism.

"But the omission of colonialism from his apology is inexplicable and inexcusable. It remains deeply shameful that Britain has never said a simple 'sorry' for the loot, pillage, death and destruction perpetrated during the colonial era on millions of innocent victims of British imperialism," Mr. Tharoor said.

6. Britain's Slave Trade: Historical Injustice, Moral Accountability and Restorative Justice

GS Paper IV – Ethics: Accountability, Justice, Human Dignity, Empathy, Moral Responsibility and Ethical Leadership

Context: UK Prime Minister Andy Burnham expressed openness to a formal apology for Britain's historical role in the slave trade but ruled out financial reparations. The debate raises an important ethical question: **Does the absence of legal liability eliminate a nation's moral responsibility for historical injustice?**

1. Historical Background: The Legacy of Slavery and Colonial Exploitation

1. Approximately **3 million Africans** were transported as slaves to work on plantations in British colonies in the Americas.
2. Britain abolished the slave trade in **1807** and slavery in **1833**; enslaved people were not fully freed until 1838.
3. The British government paid **£20 million (around 40% of its annual budget in 1833)** as compensation to slave owners, rather than to enslaved people.
4. Between **1838 and 1917**, approximately 2 million Indians were transported across the British Empire as indentured labourers, including to the Caribbean and South Africa.

2. Recent Developments

1. **Formal apology:** Andy Burnham expressed willingness to consider a formal apology for Britain's historical involvement in slavery but rejected financial reparations.
2. **Alternative measures:** Former Prime Minister Gordon Brown proposed a debt-restructuring initiative for some of the poorest Commonwealth countries.
3. **Royal acknowledgement:** King Charles acknowledged the suffering and injustices of slavery during his visit to the Bahamas but stopped short of issuing a formal apology.
4. **India's perspective:** Shashi Tharoor welcomed the possibility of an apology but criticised the omission of wider colonial exploitation of India. He had previously proposed a symbolic annual payment of £1 to India for 200 years.

3. Ethical Dimensions and Mains Application

1. **Legal versus Moral Responsibility:** Legal liability may be contested across generations, but moral responsibility to acknowledge historical injustice can continue.
2. **Apology versus Reparations:** An apology provides symbolic recognition; reparations seek to address material consequences and historical inequalities.
3. **Restorative Justice:** Justice should go beyond acknowledging wrongdoing and consider appropriate corrective measures and restoration of dignity.
4. **Human Dignity and Equality:** Slavery represents a fundamental violation of liberty, equality and human dignity.
5. **Ethical Leadership:** Accepting historical wrongdoing requires integrity, empathy and moral courage rather than political convenience.

4. UPSC GS Paper IV – Relevant PYQ

2015 (10 Marks):

"A mere compliance with law is not enough, the public servant also has to have a well-developed sensibility to ethical issues for effective discharge of duties."

Application: The slavery debate illustrates that ethical responsibility is wider than legal compliance. Even when legal liability is disputed, moral acknowledgement and accountability remain important.