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National Energy Data: Survey and Analysis 2021-22

Context: The Union Ministry of Power has released the National Energy Data: Survey and Analysis 2021-22, marking the first report from the Energy Data Management Unit under the Bureau of Energy Efficiency.

- It covers data for the past six years, from FY 2016-17 to FY 2021-22, and includes analysis of fuel-wise energy consumption in major end-use sectors.
- The report highlights the impact of energy conservation policies, including their contribution to reducing carbon dioxide emissions and generating monetary savings.
- Ministry of Power, in collaboration with the Bureau of Energy Efficiency, NITI Aayog, various line Ministries and Departments, institutions, and stakeholders, prepared the report.

Value Addition:

- The report provides meticulous fuel-wise energy consumption data, enabling a comprehensive understanding of energy profiles across sectors, sub-sectors, and consumer groups.
- By incorporating distinct conversion factors based on coal's calorific values, the report paints an accurate picture of coal-based energy supply and consumption, distinguishing between domestic and imported coal.
- The 2023 report from the Ministry of Statistics & Programme Implementation introduces a refined approach, utilizing weighted average methodology to derive coal conversion factors, departing from the outdated practice of employing a single representative GCV for all coal grades.

New Insights:

- Startlingly, the report uncovers an 18% deficit in the actual energy supply to the economy over the past six years, attributing the disparity to the utilization of indigenous coal conversion factors rather than the previously employed IEA standards.
- Energy consumption in the recent fiscal year of 2021-22 falls short by 8%, deviating from prior estimations.
- The report highlights a notable upsurge in the share of electrification, contributing to a substantial 20.9% slice of the energy consumption pie, underscoring the mounting reliance on electric power as a preferred energy source.

Bureau of Energy Efficiency

- The Bureau of Energy Efficiency (BEE) is an agency of the Government of India, established in March 2002 under the Energy Conservation Act of 2001.
- The EC Act encompasses five key provisions related to Designated Consumers, Standard and Labelling of Appliances, Energy Conservation Building Codes, Creation of Institutional Set up (BEE), and Establishment of Energy Conservation Fund.
- BEE's main function is to develop programs aimed at promoting energy conservation and efficient energy use in India.
- The government has proposed mandatory appliance ratings by BEE, starting from January 2010, for certain appliances in India.
- The primary objective of these initiatives is to reduce energy intensity in the economy and foster energy efficiency across all sectors.
- BEE's mission is to institutionalize energy efficiency services, establish delivery mechanisms, and provide leadership in energy efficiency for all sectors of the country.
- The list of mandatory appliances subject to BEE ratings includes:
 - Frost Free (No-Frost) Refrigerator
 - Tubular Fluorescent Lamps
 - Room Air Conditioners (Cassette, Floor Standing Tower, Ceiling, Corner AC)
 - Distribution Transformer
 - Colour TV
 - CST AC

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- Direct Cool Refrigerator
- Electric Geyser

Denotified Tribes

Context: Rajasthan's Congress government is formulating a policy for denotified tribes before the Assembly election, despite their limited voter registration due to nomadic lifestyles and lack of residential proof.

What are Denotified tribes?

- Denotified tribes (DNTs) were considered "born criminals" under British rule through laws like the Criminal Tribes Act of 1871.
- In 1952, after India gained independence, DNTs were denotified, but the Habitual Offenders Act of 1952 was implemented.
- Nomadic and semi-nomadic communities are those who do not have a fixed place of residence and move from one location to another.

National Commission for De-notified, Nomadic, and Semi-Nomadic Tribes (NCDNT)

- The National Commission for De-notified, Nomadic, and Semi-Nomadic Tribes (NCDNT) was established in 2003 and reconstituted in 2005.
- Under the leadership of Balkrishna Sidram Renke, the NCDNT estimated the population of these tribes to be approximately 10.74 crore based on the 2001 Census.
- In 2014, a new commission was formed to create a state-wise list of de-notified, nomadic, and semi-nomadic tribes.
- The commission submitted a report in 2018, identifying 1,262 communities falling under the category of de-notified, nomadic, and semi-nomadic tribes.
- The 2014 commission, which submitted its report in 2018, recommended the establishment of a permanent commission for de-notified, nomadic, and semi-nomadic communities.
- Instead, the government formed the Development and Welfare Board for De-notified, Nomadic, and Semi-Nomadic Communities (DWBDNC) under the Societies Registration Act, 1860.
- The DWBDNC operates under the Ministry of Social Justice and Empowerment and is responsible for implementing welfare programs for these communities.
- In 2019, the DWBDNC was constituted with Bhiku Ramji Idate as its chairman.
- The NITI Aayog has established a committee to facilitate the identification process of de-notified communities.
- The Anthropological Survey of India is conducting ethnographic studies on de-notified, nomadic, and semi-nomadic communities.

History of Deprivation

These communities encounter various problems, such as:

- Marginalization and exclusion from social and economic mainstream
- Low human development index and high relative deprivation index
- Limited access to the benefits of planned development
- Lack of empowerment
- Carrying the burden of social stigma

The Criminal Tribes Inquiry Committee in 1947

- The Ananthasayanam Ayyangar Committee in 1949
- The Kaka Kalelkar Commission in 1953
- B N Lokur's Advisory Committee in 1965
- The B P Mandal Commission in 1980

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The National Commission to Review the Working of the Constitution, chaired by Justice M N Venkatachaliah in 2002

India and US have signed Artemis Accord

Context: India and the United States have signed the Artemis Accord to enhance their space cooperation to new heights.

- The signing of the "Artemis Accords" and a joint Indo-US mission to the International Space Station in 2024 will elevate bilateral relations and provide momentum to the space sector.
- The Artemis Accord establishes a common vision with the US and other countries through principles, guidelines, and best practices.
- India and the US will develop a framework for a joint mission to the International Space Station in 2024.
- ISRO is likely to collaborate with NASA on a manned mission to the moon by 2025.
- NASA will provide advanced training to Indian astronauts at the Johnson Space Centre in Houston, Texas, with the goal of a joint effort to the International Space Station in 2024.
- ISRO and its commercial arms have successfully launched 385 foreign satellites from 34 countries on board PSLV.

What is Artemis Accord?

- The Artemis Accords are a set of non-binding principles for civil space exploration and use in the 21st century.
- These principles aim to ensure the safety and predictability of outer space activities.
- NASA and the U.S. Department of State established the Artemis Accords in 2020, with eight founding member nations.
- As of May 30, 2023, the signatories of the Artemis Accords include Australia, Bahrain, Brazil, Canada, Colombia, Czech Republic, France, Israel, Italy, Japan, Luxembourg, Mexico, New Zealand, Nigeria, Poland, the Republic of Korea, Romania, Rwanda, Saudi Arabia, Singapore, Spain, Ukraine, the United Arab Emirates, the United Kingdom, and the United States.
- The accords promote international cooperation and responsible space exploration practices.
- Principles of the Accord:
 - Peaceful Purposes
 - Transparency
 - Interoperability
 - Emergency Assistance
 - Registration of Space Objects
 - Release of Scientific Data
 - Protecting Heritage
 - Space Resources
 - Deconfliction of Activities
 - Orbital Debris and Spacecraft Disposal

NASA's Artemis Programme

- The Artemis Program by NASA aims to land humans on the moon by 2024.
- It includes a mission to land the first woman and the first person of colour on the moon.
- The program seeks to contribute to scientific discovery and generate economic benefits.
- One of its key objectives is to inspire and engage a new generation of explorers.

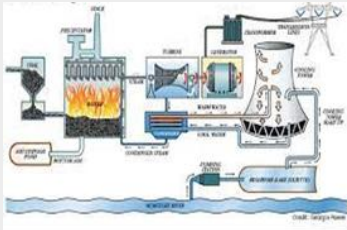
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NEWS IN BETWEEN THE LINES

Coal-Based Thermal Power Generation



Context: Recently, a report by the Centre for Science and Environment (CSE) reveals that India's coal-based thermal power generation sector is failing to comply with sulphur dioxide (SO₂) emission norms.

Key highlights:

- The Union Ministry of Environment, Forest and Climate Change (MoEFCC) made it mandatory for thermal power plants to install FGD systems to remove sulphur dioxide from their exhaust.
- However, as of April 2023, only 5% of the installed coal-based thermal power generation capacities in India had the FGD mechanism in place.
- Only 0.81 GW out of 32.63 GW of newly commissioned capacity was found to comply with the norms.

What is India's Coal-Based Thermal Power Generation?

- India's coal-based thermal power generation refers to the production of electricity using coal as the primary fuel source. It is a significant component of India's energy mix and plays a crucial role in meeting the country's electricity demand.

Regional variations:

- Eastern India showed abysmal results, with no plant found to be compliant with SO₂ emissions norms.
- Maharashtra had the highest capacity complying with the norms, followed by Gujarat, Uttar Pradesh, Haryana, and Tamil Nadu.

Compliance estimation:

- The CSE team estimated the likelihood of coal power plants meeting emission norms based on compliance stage and duration. Around 57% of the capacity near Delhi-NCR or million-plus cities is expected to meet the deadline, while 11% within a 10 km radius of critically polluted areas is unlikely to comply.

Gangotri National Park



Context: Recently, the Gangotri National Park (GNP), situated in Uttarakhand, has made the decision to allocate approximately 50 hectares of land to the Indian Army and Indo-Tibetan Border Police (ITBP).

Gangotri National Park:

- It was established in 1989, Gangotri National Park is located in Uttarkashi, Uttarakhand.
- It spans the upper catchment area of the Bhagirathi River and encompasses Gaumukh at Gangotri Glacier, which is the origin of the Ganga River.
- The park acts as a vital link between Govind National Park and Kedarnath Wildlife Sanctuary.

Indo-Tibetan Border Police (ITBP):

The Indo-Tibetan Border Police (ITBP) was established in 1962, with its headquarters in New Delhi. In November 2019, the Ministry of Home Affairs proposed the merger of the Assam Rifles with the ITBP.

Implications:

- The allocation of land from Gangotri National Park to the Army and ITBP signifies the strategic importance of the region, particularly in terms of border security.
- It highlights the collaboration between environmental conservation efforts and national security interests, striking a balance between safeguarding natural resources and protecting territorial integrity.

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Nimesulide Drug



Context: Recently, the Vulture conservationists and experts have welcomed the central government's decision to ban veterinary drugs aceclofenac and ketoprofen, which are fatal for vultures.

What is Nimesulide Drug?

- Nimesulide is a non-steroidal anti-inflammatory drug (NSAID) that is commonly used for pain relief and reducing inflammation.
- It belongs to the class of selective COX-2 inhibitors. In India, the use of nimesulide has raised concerns regarding its impact on vultures.

Keyhighlight:

- The ban on aceclofenac and ketoprofen is the second significant step towards vulture conservation since the banning of Diclofenac in 2006.
- The International Union for Conservation of Nature has classified three Gyps species found in India as critically endangered.
- Vultures are critically endangered species, and their conservation is a pressing concern.
- The Drugs Technical Advisory Board's decision to ban aceclofenac and ketoprofen for veterinary use is a positive step.
- Ketoprofen and aceclofenac are equally toxic to vultures as Diclofenac and can lead to their death.
- The matter was pursued through various government channels since 2014, involving the Department of Animal Husbandry and Dairying, forest department, and food and drugs department.
- The demand for a ban on nimesulide, another drug harmful to vultures, continues.
- Rajasthan, Gujarat, and northeast India are particularly susceptible to such threats, and migratory vultures are also affected.

Context: Recently, It is found that newborn infection rates in low-income countries are three to 20 times higher than in high-income countries, contributing to a significant proportion of neonatal deaths globally.

Klebsiella Pneumoniae Prevalence:

Klebsiella pneumoniae infections, caused by a bacteria that can lead to various infections in humans, have a prevalence ranging from 4.1 to 6.3 per 1,000 live births. Case fatalities associated with this infection range from 18% to 68%.

High mortality rates:

The pooled global prevalence of carbapenem-resistant Klebsiella pneumoniae infections in hospitalized neonates is high, with a 22.9% pooled mortality rate.

Antimicrobial resistance in neonates:

Rising antimicrobial resistance is affecting neonates and young infants with sepsis in low- and middle-income countries. WHO-recommended antibiotics are becoming ineffective in treating these infections.

Pathogens and resistance:

Pathogens such as Klebsiella pneumoniae and Acinetobacter spp. are resistant to WHO-recommended regimens. These bacteria show significant resistance to carbapenems, which are commonly used antibiotics.

Deviation from WHO guidelines:

Antibiotic regimens used in neonatal sepsis often deviate from the World Health Organization (WHO) guidelines. Inappropriate prescription practices contribute to the development of antimicrobial resistance.



Antimicrobial Resistance

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Places in News

The Kalasa Banduri project

Context: The Kalasa Banduri project on Mahadayi river in Karnataka is facing challenges as tenders were floated without obtaining forest and environment clearance.

Geographical Location:

The Kalasa Banduri project is located on the Mahadayi River, primarily in the state of Karnataka, India. The river originates in the Bhimgad Wildlife Sanctuary in Belagavi district of Karnataka and flows through the states of Karnataka, Maharashtra, and Goa before draining into the Arabian Sea.

The Mahadayi River:

The Mahadayi River, also known as the Mandovi River, originates from springs in the Western Ghats of Belgaum district in Karnataka. It flows through the states of Maharashtra, Goa, and Karnataka.

Project's aim:

The project aims to divert water from the Mahadayi River to meet the drinking water needs of Belagavi, Dharwad, Bagalkot, and Gadag districts in Karnataka.

It involves constructing barrages on the Kalasa and Banduri streams, which are important tributaries of the Mahadayi River. The diverted water would provide relief to the water-scarce regions of Karnataka, which often face acute shortages, especially during dry seasons.



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