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CURRENT AFFAIRS

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ETHANOL BLENDING IN PETROL

This article covers "Daily Current Affairs" and the topic details "Ethanol Blending in Petrol". This topic has relevance in the Environment section of the UPSC CSE exam.

GS 3: Environment

Why in the news?

As more than 100 countries committed to tripling global renewable energy capacity by 2030 at COP28 in Dubai, India finds itself delicately navigating its ethanol blending target.

Background:

The ethanol-blended petrol (EBP) in India witnessed a significant rise from 1.6% in 2013-14 to 11.8% in 2022-23. However, the ambitious goal of achieving a 20% ethanol blending target by 2025 is facing challenges. Issues such as low sugar stocks in 2022-23 and the anticipated shortfall in sugarcane production this year have added complexity to India's ethanol blending trajectory.

About Ethanol Blending:

Ethanol blending in petrol is a sustainable practice involving the mixing of ethanol, a biofuel derived from sugars, with petrol to create blended fuels. India, in its pursuit of energy security and environmental sustainability, has been actively implementing an Ethanol Blending Programme (EBP).

Common Blends:

- E10 Blend: Comprising 10% ethanol and 90% petrol, E10 is the standard blend used in ethanol blending.
- E20 Blend: A higher ethanol blend with 20% ethanol and 80% petrol, offering increased biofuel content.

Ethanol Production:

- Ethanol is produced through the fermentation of sugars by yeasts or via petrochemical processes like ethylene hydration.

Ethanol Blending Targets:

- India initiated its Ethanol Blending Programme in 2003 to reduce crude oil imports, cut carbon emissions, and enhance farmers' incomes.

- The National Policy of Biofuels 2018 set targets of 20% ethanol blending in petrol and 5% biodiesel blending in diesel by 2030.
- Reflecting commendable progress, the government advanced the ethanol blending target to 20% by the Ethanol Supply Year 2025-26, showcasing the success of the program.

Recent Achievements:

- In 2022, India's ethanol blending program achieved a notable milestone, reaching 10% ethanol blending in petrol.
- The advancements underscore India's commitment to sustainable energy practices and reducing dependence on conventional fuels.

Biofuel Association:

- In India, biofuels are predominantly linked to first-generation (1G) ethanol, derived from food crops such as sugarcane and food grains.

Benefits:

- **Reduced Dependence on Non-Renewable Fossil Fuels:**
 - Ethanol, derived from renewable sources like corn, sugarcane, or biomass, helps diminish reliance on non-renewable fossil fuels.
 - India's substantial petroleum imports (185 million tonnes in 2020-21, costing USD 551 billion) underscore the significance of reducing dependence on conventional fuels.
- **Reduced Greenhouse Gas Emissions:**
 - Ethanol's oxygen content enhances fuel combustion, leading to more complete burning and reduced emissions of pollutants like carbon dioxide and carbon monoxide.
- **Improved Efficiency:**
 - Higher octane rating in ethanol improves the octane level of blended fuel, contributing to better engine performance and efficiency.
- **Boost to Farmer's Income:**
 - Ethanol production from farm residue offers a dual benefit by increasing farmers' income and reducing air pollution associated with stubble burning.

Challenges:

- **Food Security Concerns:**
 - Lower sugar production projections (9% fall at 337 lakh tonnes for the 2023-24 marketing year) raise concerns about diverting sugar for ethanol production.
 - Adverse weather conditions, such as weak monsoons in cane-growing districts, may further impact sugar production, potentially turning India into a net sugar importer.
- **Grain-Based Ethanol Transition:**
 - The shift towards grain-based ethanol, particularly through organized maize-feed supply chains, raises concerns about food security.
 - There is a risk of diverting food grain cultivation areas for ethanol production, impacting the availability of essential food resources.
- **Environmental Concerns:**
 - Water-Intensive Agriculture: Cultivating water-intensive crops like sugarcane for ethanol production contributes to significant groundwater depletion, raising environmental concerns.

- Agriculture's GHG Emissions: Diverting crops from food production to fuel production increases greenhouse gas (GHG) emissions in the agriculture sector, countering efforts to reduce emissions in the transport sector.
- No Reduction in NOX Emissions: While ethanol reduces emissions like carbon monoxide, it does not address nitrous oxide emissions, a major environmental pollutant with detrimental effects.
- **Challenge of Scaling Up:**
 - Balancing economies of scale with the energy needs and costs associated with biomass collection and transport poses a challenge in scaling up ethanol production.
 - The significant increase in ethanol production capacity (from 423 crore litres in 2019-20 to 947 crore litres in 2022-23) indicates a need for additional capacity (8-10 billion litres) to achieve the 20% petrol-ethanol blending requirement in 2023.
 - The non-implementation of amended provisions of the Industries (Development & Regulation) Act, 1951, by all states poses a significant hurdle to ethanol blending in India. Restrictions on the inter-state movement of ethanol hinder the smooth operation of the blending program.

Way Forward

- **Exploring Ethanol from Wastes:**
 - India has a unique opportunity to position itself as a global leader in sustainable biofuels by redirecting its focus towards producing ethanol from wastes.
 - This shift not only promises significant climate benefits but also addresses air quality issues, as these wastes are often burned, contributing to smog.
- **Addressing Water Crisis Concerns:**
 - The evolving ethanol policy must be crafted with careful consideration to avoid driving farmers towards water-intensive crops, preventing the exacerbation of the existing water crisis in a country already grappling with acute shortages.
 - Given that rice, sugarcane, and wheat account for about 80% of India's irrigation water, policy adjustments are crucial.
- **Prioritizing Crop Production:**
 - In the face of depleting groundwater, limited arable land, unpredictable monsoons, and declining crop yields due to climate change, there is a pressing need to prioritize food production over crops intended for fuel.
- **Exploring Alternative Mechanisms:**
 - To meet the primary goal of emissions reduction, it is imperative to assess alternative mechanisms such as increased adoption of electric vehicles and the installation of additional renewable generation capacity to facilitate zero-emission recharging.
 - Evaluating and incorporating diverse strategies will contribute to a comprehensive and sustainable approach to emissions reduction.

SOURCE:

Explainer: How existing curbs may impact India's 20% ethanol blending goals | Mint (livemint.com)

Q.1 Consider the following statements:

1. Ethanol is mixed in diesel to produce Gasoline.
2. In 2022, India's ethanol blending program reached 30% ethanol blending in fuel.

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: D

Q.2 Evaluate the significance of ethanol blending in petrol as a sustainable approach for India's energy security.

Rishabh

'TELECOM BILL 2023' AND DIGITAL SOVEREIGNTY IN INDIA: FUTURE AND CHALLENGES.

(This article is from 'Indian Express', 'The Hindu', 'Jansatta', 'Official websites of Bharat Sanchar Nigam Limited and Mahanagar Telephone Nigam Limited', 'Sansad TV's program Sarokar', monthly magazine 'World Focus' and 'PIB'. The included editorial is a brief summary of the same. It also includes the suggestions of the **Yojana IAS team**. This article is about the UPSC Civil Services Examination especially 'Polity and Governance of India, Achievements of Indians in Science and Technology, Information Technology and Computers, Growth and Development. This article is related to 'Telecom Bill 2023' and 'Digital Sovereignty in India: Future and Challenges' under 'Daily Current Affairs').

General Studies: Polity and Governance of India, Achievements of Indians in Science and Technology, Information Technology and Computers, Growth and Development, Development Related Issues and Industrial Development.

Why in discussion?

Union Telecommunications Minister of the Government of India, Ashwini Vaishnav recently introduced the '**Telecommunications Bill 2023**' in the Rajya Sabha. This bill was passed in the Lok Sabha only on 20 December 2023. After Lok Sabha, Rajya Sabha has also passed this bill by giving its approval by voice vote. **It also amends the Telecom Regulatory Authority of India (TRAI) Act, 1997.** Under this bill itself, non-auction process will be adopted for allocation of satellite spectrum. The Bill allows the Central Government to take over the telecommunication network in case of any public emergency or in the interest of public safety. This new bill will replace **the Indian Telegraph Act 1885, the Indian Wireless Telegraphy Act 1933 and the Telegraph (Unlawful Possession) Act 1950**. With this, the Indian Telecom Bill 2023 has now been approved by the Parliament.



MAJOR PROVISIONS OF THE INDIAN TELECOM BILL 2023:

- **Authorization for telecommunication related activities:** Service provider companies will now require prior authorization from the Central Government for providing **telecommunication services, establishing, operating, maintaining or expanding telecommunication networks or possessing radio equipment**. Existing licenses shall remain valid for the period of their grant or for five years where the period is not specified.
- **Allocation of Spectrum:** Spectrum will be allocated by auction, except for specified uses, where it will be allocated on administrative basis. These include purposes like **national security and defence, disaster management, weather forecasting**, transport, **satellite services like DTH and satellite telephony and purposes like BSNL, MTNL and public broadcasting services**.
- **The Central Government can re-purpose or reallocate** any frequency range. The central government can also allow sharing, trading, leasing and surrender of spectrum.
- **Satellite Internet allocation:** The bill introduces provisions to allocate **spectrum to satellite internet providers like OneWeb (backed by Bharti) and US-based companies like SpaceX's Starlink**.
- Currently, active authorizations have been granted to **OneWeb and Jio**, paving the way for satellite-based Internet services.
- **Powers of interception and search:** Messages or a class of messages between two or more persons **can be intercepted, monitored or blocked on certain grounds**.
- Such actions must be necessary or expedient in the interest of public safety or public emergency and must also be in the interest of specified grounds, including the security of the State, prevention of incitement to crimes, incitement or threat of incitement of communal riots or ethnic violence by false news, etc. Involves arrangements to control crime or public law and order.
- **Telecom services can be suspended on this basis:** The Government may take temporary possession of any telecommunications infrastructure, networks or services in case of any public emergency or public safety.
- Any officer authorized by the Government may search premises or vehicles containing unauthorized telecommunications networks or equipment.
- **Powers to prescribe standards:** The Central Government can prescribe standards and evaluation for **telecommunication equipment, infrastructure, networks and services**.

- **Telecom Providers Easement Right of Way:** The Bill allows utility providers to seek **right-of-way/right-of-way on public or private property** for setting up telecommunication infrastructure .
- This should, as far as possible, provide access to information on a non-discriminatory and non-exclusive basis.
- **Priority transmission of messages during disaster:** During any public emergency, the Central or State Government may temporarily suspend any telecommunication service.
- The government may establish a system to guarantee that messages sent by authorized users are transmitted first for response and recovery.
- **New provision for media:** According to the new bill, messages of correspondents accredited by the Central or State Governments will not be stopped unless their broadcast is prohibited under the rules applicable to public emergency and public order.
- **3 years jail and fine of Rs 50 lakh for SIM card fraud:** There are strict provisions in the bill to stop issuing fake SIM cards. Any kind of SIM card fraud will attract a jail term of three years and a fine. Under the bill, there is a provision of up to three years in jail or a fine of up to Rs 50 lakh for selling, buying and using SIM cards. Biometric data will be taken to sell the SIM only after that the SIM will be issued.
- **Protection of privacy of consumers or users:** The Central Government may provide measures to protect the privacy of consumers or users including: **prior consent to receive specified messages such as advertising messages , creation of 'Do Not Disturb' registers and providing information to consumers about the privacy of consumers or users.** or establishing a mechanism to allow users to report malware or specified messages.
- **Biometric authentication** should be mandatory for telecom customers to deal with spam calls and messages .
- Entities/companies providing telecom services will have to set up an online mechanism for registration and redressal of complaints.
- **Authority to Waive fees:** The Bill gives the government the power to waive entry fees, license fees, fines etc. in the interest of consumers.
- **Appointments to the Telecom Regulatory Authority of India (TRAI):** This Bill amends the **TRAI Act** to allow persons with at least **30 years** of professional experience to serve as Chairman/Chairperson and to serve as members. Minimum of **25 years** of professional experience is allowed.
- **Digital India Fund: The Universal Service Obligation Fund** has been established under **the 1885 Act** to provide telecommunication services in deprived areas.
- This provision has been retained in this Bill, but **the name of the fund** has been changed to Digital India Fund and it also allows its use for research and development.
- **Regulation of OTT apps:** The Bill has **removed over-the-top (OTT) services and apps from the definition of telecommunication services , giving major relief to communication service providers like WhatsApp and Telegram .**
- **The Ministry of Electronics and Information Technology** will handle regulation of OTT apps under a potential Digital India Act, which is not included in the Telecom Bill.
- **Provision of Offenses and Punishments under it:** The Bill specifies various criminal and civil offences. Providing telecommunication services without authorization or gaining unauthorized access to telecommunication networks or data is **punishable with imprisonment of up to three years, fine up to two crore rupees, or both.**

- Violation of the terms and conditions of the authority may impose a civil penalty of up to **Rs 5 crore**.
- Possession of unauthorized equipment or use of unauthorized network or service may **attract a fine of up to Rs 10 lakh**.
- **Procedure for appointment of officer to inquire into and adjudicate against civil offences:** The Central Government shall **appoint an adjudication officer to inquire into and pass orders** against civil offenses under this Bill.
- The officer should be of the rank of Joint Secretary and above.
- Appeals against the orders of the Adjudicating Officer can be made **before the designated Appeal Committee within 30 days**.
- Appeals against the orders of the Committee regarding violation of terms and conditions can be filed within 30 days in the Telecom Disputes Settlement and Appellate Tribunal (TDSAT).
- **Integrating the Trusted Source Mechanism:** A measure initially established following the India-China border conflict in 2020 to prevent import of telecommunications equipment from potentially adversarial countries has **now been integrated into this law**.

Issues:

- **Decline in Average Revenue Per User (ARPU):** The decline in ARPU has been steadily accelerating, with declining profits and in some cases serious losses, leading the Indian telecom industry to seek consolidation as the only way to increase revenues.
- **Lack of telecom infrastructure in semi-rural and rural areas:** Service providers have to bear huge upfront fixed costs to enter semi-rural and rural areas.
- **Margin pressure due to competition:** With competition intensifying after the entry of Reliance Jio, other telcos are experiencing a sharp decline in tariff rates for both voice calls and data (more important for data customers).

STATUS OF TELECOM SECTOR IN INDIA:

Present situation:

- The telecom industry sector in India is **the second largest in the world with a user base of 1.179 billion (wireless + wireline users) by August 2023**.
- **The telecom industry sector is the fourth largest in terms of FDI inflows to India, contributing 6% to India's total FDI inflows in terms of FDI sector.**
- The total tele-density in India is **84.69%**. Tele-density refers to the number of telephones per 100 population and is a key indicator of access to telecommunications.
- The average monthly data consumption per wireless data user has also increased from **61.66 MB in March 2014 to 17.36 GB in March 2023**.

Government Initiatives Launched by Government of India:

- The Department of Information Technology aims to set up more than 1 million internet-enabled Common Service Centers across India, as per the **National e-Governance Plan**.
- The FDI limit in the telecom sector has been increased from 74 per cent to 100 per cent of which 49 per cent will be through the automatic route, while the remaining will be through the Foreign Investment Facilitation Portal (FIPB) approval route.
- FDI up to 100 per cent is permitted for infrastructure providers offering dark fibre, electronic mail and voice-mail.

- **Prime Wi-Fi Access Network Interface (PM-WANI)**
- **BharatNet Project.**
- **Production Linked Incentive (PLI) Scheme for manufacturing of telecom and networking products.**
- **India 6G Alliance.**

Concerns about the bill:

- **Privacy Concerns:** To curb fraud, it is mandatory for organizations to perform biometric authentication of their users. This increases users' privacy concerns.
- **Ambiguity in definition:** The new definition of 'telecommunication services' has been kept general and is open to wide interpretation.
- Specific reference to OTT communication services has been removed from the definition of 'telecommunication services'.
- **Network capture:** The bill empowers the government to take "temporary control/occupy" the network.
- According to experts, the government needs to define '**possession**' and specify how long the '**temporary tenure will last**'.
- **Potential misuse of power:** The Bill empowers the Central and State governments to suspend communications during any public emergency or 'in the interest of public safety'. However, this power can also be misused by the government to prevent dissent .
- **Restrictive powers of TRAI:** The draft also has a provision to allow the appointment of private sector corporate executives to the role of TRAI Chairman.
- This change may limit the role of TRAI as no industry watchdog will have a neutral and independent perspective to promote progressive and positive developments in the telecom sector.
- **Spectrum Allocation:** There is difference of opinion among private telecom companies on this matter.
- During TRAI's consultation process in June this year, **Elon Musk's Starlink, Amazon's Project Kuiper and India's Tata Group opposed the allocation of satellite spectrum through auction.** While Bharti Airtel and Reliance Jio supported the spectrum auction .

THE WAY FORWARD TO SOLVE THE PROBLEMS OF THE TELECOM SECTOR:

- Given the vast opportunities in this sector, there is a need for an active and facilitative government role in the telecom sector.
- **The Telecom Regulatory Authority of India (TRAI)**, an independent and statutory body, should play an important role as a watchdog of this sector.
- A more proactive and timely dispute resolution by **TDSAT (Telecom Dispute Settlement and Appellate Tribunal)** is the need of the hour.
- The new regulatory act should contain relevant provisions on measures to ensure emergency situations, public safety and national security.
- Also the punishment should be proportionate to the violation, keeping this in mind there is a need to update the new law, bringing together the various provisions on penalties and offences.

Practice Questions for Preliminary Exam:

Q. 1. Consider the following statements in the context of 'Telecom Bill 2023'.

1. It relates to amendments to the Telecom Regulatory Authority of India (TRAI) Act, 1997.
2. The telecommunications industry in India is the second largest industry in the world in terms of users.
3. Now under this bill itself, non-auction process will be adopted for allocation of satellite spectrum.
4. The Bill allows the Central Government to take over the telecommunication network in case of any public emergency or in the interest of public safety.

Which of the above statement/statements is correct?

1. Only 1, 3 and 4
2. only 2 and 4
3. All of these.
4. None of these.

Answer - (c)

Practice Questions for Main Exam:

Q.1. Highlight the major provisions of the Telecom Bill 2023 and discuss whether it violates the 'Right to privacy of the Individual'? How does it promote digital inclusion and digital literacy in India? Give a logical explanation.

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