2019

drishti

# CURRENT AFFAIRS

## SCIENCE & TECHNOLOGY

16th December- 21st December

THE HINDU | The Indian EXPRESS | live mint

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1. **Fuel Cell Electric Vehicles (FCEVs)**

**Why in News?**

Recently the Supreme Court of India has asked the government to look into the feasibility of hydrogen-based technology to deal with vehicular air pollution in National Capital Region.

**Fuel Cell Electric Vehicles (FCEVs)**

- These vehicles use fuel cells which are based on hydrogen and an oxidant to create electricity by an electrochemical process.
- The fuel cell combines hydrogen and oxygen to generate an electric current producing water as by-product; converting chemical energy into electrical energy.

**Hydrogen + Oxygen = Electricity + Water Vapor**

**Advantages**

- These vehicles produce much smaller quantities of greenhouse gases and none of the air pollutants that cause health problems.
- With pure hydrogen, these vehicles emit only heat and water as a byproduct.
- Fuel cells are far more energy efficient than traditional combustion engines.
- Unlike battery-powered electric vehicles, these vehicles do not need to be plugged in, and most models exceed 300 km of range on a full tank.

**Concerns**

- Although FCEVs do not generate gases that contribute to global warming, the process of making hydrogen needs energy often from fossil fuel sources.
- Safety Concerns — Hydrogen is more explosive than petrol.
- Hydrogen fuel vehicles are expensive as compared to petrol/diesel based vehicles.

2. **National Broadband Mission (NBM)**

**Why in News?**

- The Union Telecom Minister has launched the National Broadband Mission (NBM) under National Digital Communications Policy, 2018.
    - Through Bharat Net, broadband services have reached in as many as 1,42,000 village blocks and the latest mission aims to offer

broadband for all by 2022 including remotely located hospitals, schools and post offices.

**National Broadband Mission**

- Some of the objectives of the mission which are structured with a strong emphasis on the three principles of universality, affordability and equality are-

**Objectives**

- To increase in tower density from 0.42 to 1.0 tower per thousand of population by 2024.
- Develop a **Broadband Readiness Index (BRI)** to measure the availability of digital communications infrastructure and conducive policy ecosystem within a State/UT.
- Creation of a digital fiber map of the Digital Communications network and infrastructure, including Optical Fiber Cables and Towers, across the country.
- Address policy and regulatory changes required to accelerate the expansion and creation of digital infrastructure and services.
- Investment from stakeholders of Rs 7 Lakh Crore including Rs 70,000 crore from **Universal Service Obligation Fund (USOF)**.
- Laying incremental 30 lakh route km of Optical Fiber Cable, with increasing tower density from 0.42 to 1 tower per thousand of population by 2024.
    - The centre will work with states and UTs for having consistent policies pertaining to expansion of digital infrastructure including Right of Way (RoW) approval required for laying of optical fibre cable.

**Universal Service Obligation Fund**

- Established in 2002, the USOF is headed by the USOF Administrator who reports to the Secretary, Department of Telecommunications (DoT).
- The Indian Telegraph (Amendment) Act, 2003 gave statutory status to the Universal Service Obligation Fund (USOF).
- Fund comes from the universal service levy charged from the telecom operators which is then deposited into the Consolidated Fund of India and needs prior parliamentary approval to be dispatched.
- It aims to provide universal telecom services and ensure that even the unconnected areas in the country reap the benefits of inclusive development.

## 3. StrandHogg

**Why in News?**

The Union Home Ministry has alerted States, warning them about the vulnerability of the **Android operating system** to a bug called **'StrandHogg'.**

**About StrandHogg**

- It is a vulnerability in android which allows real-time malware applications to pose as genuine applications and access user data of all kinds.
- It can listen to the conversations, access photo album, read/send messages, make calls, record conversations, get login credentials to various accounts, access private images, files, contact details, call logs and location information without being apparent to the affected users.

**To Watch the Video on YouTube,**
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