Prelim Bits 23-08-2023 | UPSC Daily Current Affairs

Shadow Banks

Reserve Bank of India is reluctant to hand out NBFC licences to PhonePe, Razorpay, BharatPe, OkCredit and NiYo which operates as neo-bank.

- The term “shadow banking,” was coined by *McCulley.*
- The shadow banking system consists of lenders, brokers, and other credit intermediaries who fall *outside the realm of traditional regulated banking.*
- **Examples** - Hedge funds, private equity funds, mortgage lenders, and even large investment banks.
- It is generally unregulated and not subject to the same kinds of risk, liquidity, and capital restrictions as traditional banks are.
- It played a major role in the expansion of housing credit in the run-up to the 2008 financial crisis.
- **Advantages** - It reduces the dependency on traditional banks as a source of credit.
- It acts as an additional source of lending, and provides diversification in the financial system.
- **Disadvantages** - Shadow banking can contribute to too much lending in the economy.
- This has the potential to lead to a harmful downturn.

Neo banks

- They are new-age banks *without any physical location, present entirely online.*
- They provide digital, mobile-first financial solutions for payments, money transfers, lending, and more.
- They allow customers to make deposits and withdraw money and offer debit cards, investment facilities, etc.
- In India, these firms *don't have a bank licence of their own* but rely on bank partners via corporate collaborations to provide licensed core banking services and over-the-top financial services.
- Neobanks provide products that come under the regulatory framework of the 3 financial regulators
    1. Reserve Bank of India
    2. Securities & Exchange Board of India
    3. Insurance and Regulatory Development Authority of India

References

1. Hindu Business Line – RBI reluctant to give NBFC licences to fintechs
2. Financial Times – India’s shadow banks are resurging

Bharat NCAP

From October 1, car manufacturers can volunteer to get a star rating indicating the safety of their models in a crash, under an indigenous programme for testing.

- **About** - The Bharat New Car Assessment Programme (Bharat NCAP) is modelled on the *Global New Car Assessment Programme (Global NCAP).*
- The Global NCAP is a project of the Towards Zero Foundation, a U.K.-registered charity that promotes universal adoption of the United Nation's most important motor vehicle safety standards worldwide.
- **Key features** - The new programme will be applicable to passenger vehicles with not more than 8 seats in addition to the driver's seat with gross vehicle weight not exceeding 3,500 kg.
- It will be based on the soon-to-be published *Automative Industry Standard 197*, which lays down testing protocols.
- A rating from one star to five stars will be assigned to a vehicle after an evaluation of 3 parameters
    1. Adult occupant protection
    2. Child occupant protection
    3. Safety assist technologies present in the car
- The programme is ***voluntary*** except in certain cases such as a base variant of a popular vehicle model (minimum clocked sale of 30,000 units), or when the Ministry recommends a model for testing based on market feedback or in the interest of public safety.

References

1. The Hindu – India gets its own car crash testing programme
2. CNBC – Nitin Gadkari launches Bharat NCAP

Vegetated canopies

As Europe battles scorching temperatures and wildfires, vegetated canopies were introduced in Spain for creating green spaces.

- Vegetated canopies are sail-like structures that have been anchored to the frontages of surrounding buildings.
- They *mimic natural canopies* found in forests and various plant species.
- They can be placed in streets, where planting trees may not be feasible owing to the lack of space.
- The plants grow hydroponically, with a water supply point and water outlet for draining purposes.
- **Advantages** – It reduces the temperature both in their surroundings and under the cover.
- The plants chosen belong to species that are optimized for the absorption of gases such as carbon monoxide and nitrogen oxide.
- The substrate also absorbs sound waves, reducing noise pollution.
- It could eventually contribute to urban biodiversity, creating a healthier ecosystem

that supports a variety of wildlife.

A square meter of a vegetated canopy generates the oxygen required by a person for the whole year, apart from filtering harmful gases.

Reference

1. The Indian Express – Vegetated canopies for creating green spaces

Methylotuvimicrobium buryatense 5GB1C

According to a new study, a strain of bacteria could potentially remove methane from major emission sites such as landfills, paddy fields, and oil and gas wells.

- Methylotuvimicrobium buryatense 5GB1C is a *bacterial strain that consumes methane (methanotrophs).*
- It can grow at low methane concentrations ranging from 200-1,000 ppm.
- Bacteria produce biomass after consuming methane, which can be used as feed in aquaculture.

Methanotrophs

- Methanotrophs are organisms that require methane as a source of carbon and energy for their metabolism.
- They are *gram-negative bacteria* that are capable in utilizing methane as a carbon energy source and able to grow both *aerobically or anaerobically* which only need single-carbon compound to live on.

Methane

- Methane is responsible for *30% global warming.*
- It has a lifetime of *12 years* (lesser when compared to CO2)
- It is over *85 times more potent* than carbon dioxide (CO2) on a 20-year timescale.

Reference

1. Down To Earth – A bacteria that can eat methane

Demon Particles

Scientists recently claimed to have found a "demon particle" while plunging into the depths of atoms.

- Electrons have *both mass and charge.*
- In 1956, physicist David Pines predicted that the combinations of electrons in a solid could form a composite particle that is *massless, has no charge and does not interact with light*.
- This is called as a demon particle.

- It is not a particle in the traditional sense like a proton or electron.
- This particle demonstrates its capabilities regardless of temperature, in contrast to standard superconductors, which need very low temperatures to function.
- This could pave the way for *room-temperature superconductors*.
- The newly discovered demon particle exhibits *Plasmon-like behavior* and presents particular experimental difficulties because it is electrically neutral.

  Plasmons are collective oscillations of the electrons which are present at the bulk and surface of conducting materials and in the neighborhood of conducting particles.

References

1. Business Standard – Demon Particles
2. NDTV – Scientists Discover Demon Particles

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