

'KAVACH' SYSTEM

The Indian Railways has recently made a provision of Rs 272.30 crore in Financial Year 2022-23 for the implementation of KAVACH.



About:

What is Kavach?

- Indian Railways has indigenously developed an **automatic train protection system** rechristened as '**Kavach**' (Train Collision Avoidance System), to prevent accidents due to human error resulting in Signal Passing at danger and over-speeding.
- It is a set of electronic devices and **Radio Frequency Identification devices** installed in locomotives, in the signalling system as well the tracks, that talk to each other using ultra high radio frequencies to control the brakes of trains and also alert drivers, all based on the logic programmed into them.
- One of its features is that by **continuously refreshing the movement information** of a train, it is able to send out triggers when a loco pilot jumps signal, called **Signal Passed at Danger (SPAD)**, a grave offence in railway operations with respect to safety, and the key to accidents like collision.
- The devices also **continuously relay the signals ahead to the locomotive**, making it useful for loco pilots in low visibility, especially during dense fog.
- **Other benefits of 'Kavach'** include controlling speed of trains by automatic application of brakes on approach of turnouts, repeating of signal aspects in cab, which is useful for higher speeds & foggy weathers, and auto whistling at level crossing gates.

ANTICOMPETITIVE PRACTICES

Recently, Google has approached the National Company Law Appellate Tribunal (NCLAT) challenging the Competition Commission of India (CCI) order on unfair business practices.



About

- Google, was slapped with a fine of Rs 1,338 crore by CCI after being found guilty of anti-competitive behaviour in the Android mobile application ecosystem

What are Anticompetitive practices?

- It refers to a wide range of business practices in which a firm or group of firms may engage to restrict inter-firm competition to maintain or increase their relative market position and profits without necessarily providing goods and services at a lower cost or of higher quality.

What is CCI?

- The Competition Commission of India (CCI) was established in March 2009 by the Government of India under **the Competition Act, 2002** for the administration, implementation, and enforcement of the Act.

- **Composition of the CCI**

- The Commission consists of **one Chairperson and six Members** who shall be appointed by the Central Government.
- It is a **quasi-judicial body** which gives opinions to statutory authorities and also deals with other cases.
- The Chairperson and other Members shall be whole-time Members

- **Objectives:**

- It will eliminate practices having adverse effects on competition.
- To Promote and sustain competition.
- It helps in protecting the interests of consumers.
- Ensuring freedom of trade in the markets of India.
- It will Establish a robust competitive environment through:

What is NCLAT?

- It was constituted under Section 410 of **the Companies Act, 2013** for hearing appeals against the orders of the National Company Law Tribunal(s) (NCLT), with effect from 1st June 2016.

- **Functions:**

- Hearing appeals against the orders passed by NCLT(s) under Section 61 of the **Insolvency and Bankruptcy Code, 2016 (IBC)**.
 - To hear and dispose of appeals against any direction issued or decision made or order passed by the **Competition Commission of India (CCI)**.
 - It also hears and disposes of appeals against the orders of the **National Financial Reporting Authority**.
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JAPAN REVERSES NUCLEAR PHASEOUT PLAN ADOPTED AFTER FUKUSHIMA

In News:

- Recently, Japan adopted a new policy promoting greater use of nuclear energy to ensure a stable power supply amid global fuel shortages and to reduce carbon emissions.
- This is a major reversal of its phase-out plan following the Fukushima nuclear disaster.
- It was a nuclear accident in 2011 at the Fukushima Daiichi Nuclear Power Plant in Ōkuma, Fukushima, Japan.
- Following a major earthquake, a 15-metre tsunami disabled the power supply and cooling of three Fukushima Daiichi reactors, causing a nuclear accident beginning on 11 March 2011.

Nuclear Power in India

- Nuclear power is a clean and environment friendly base load source of electricity generation, which is available 24X7.
- It also has a huge potential and can provide the country long term energy security in a sustainable manner.
- Keeping these in mind, India has a largely indigenous nuclear power programme.

Nuclear energy generation in India

- India currently operates 22 nuclear reactors, with a total capacity of more than 6.7GW.

- Besides these 22 reactors, the Indian government is currently building 8 reactors with 3 proposed (total 11), with a total capacity of 8.7GW.
- The public sector entity, Nuclear Power Corporation of India (NPCIL), is responsible for designing, building, commissioning and operating nuclear power reactors in the country.
 - NPCIL operates under the Indian government's Department of Atomic Energy (DAE).
- In 2021, about 3.2 percent of the domestic production of electricity in India was derived from nuclear energy.
- Following thermal, hydroelectric and renewable sources and gas, nuclear is the fifth-largest production source of electricity in India.
- India has planned to increase the nuclear power capacity to 22,480 MW by 2031.

BUREAU OF INDIAN STANDARDS (BIS)

The Union Minister of State for Consumer Affairs, Food & Public Distribution, recently informed that to date 21,890 Standards for products, process specifications, service sectors, code of practice, and methods of test terminology have been published by the BIS.



About:

- Bureau of Indian Standards (BIS), the National Standards Body of India established under the **BIS Act 2016**.
- **Objective:** Harmonious development of the activities of standardisation, and quality assurance of goods and articles.
- It works under the **Ministry of Consumer Affairs, Food & Public Distribution**.
- BIS represents India in **International Organization for Standardization (ISO)** and **International Electrotechnical Commission (IEC)**.

What is ISO?

- It is an independent, **non-governmental international organization** with a membership of 167 national standard bodies.

- Through its members, it brings together experts to share knowledge and develop voluntary, consensus-based, market-relevant International Standards that support innovation and provide solutions to global challenges.

What is IEC?

- The IEC is a global, **not-for-profit membership organization**, whose work underpins **quality infrastructure and international trade in electrical and electronic goods**.
- The IEC brings together more than 170 countries and provides a global, neutral and independent standardization platform to 20 000 experts globally.
- It administers 4 Conformity assessment systems whose members certify that devices, systems, installations, services and people work as required.

RASHTRIYA GOKUL MISSION (RGM)

Rashtriya Gokul Mission envisages development and conservation of indigenous bovine breeds.



About:

- The Department of Animal Husbandry and Dairying is implementing RGM for development and conservation of indigenous bovine breeds since December 2014.
- The scheme is important for enhancing milk production and productivity of bovines to meet the growing demand of milk and making dairying more remunerative for the rural farmers of the country.
- Objectives
 - To enhance productivity of bovines and increasing milk production in a sustainable manner using advance technologies.
 - To propagate use of high genetic merit bulls for breeding purposes.
 - To enhance Artificial insemination coverage through strengthening breeding network and delivery of Artificial insemination services at farmers doorstep.

- **To promote indigenous cattle & buffalo rearing** and conservation in a scientific and holistic manner.
- **Funding Pattern:** All the components of Scheme will be implemented on **100% grant-in-aid basis except the components of:**
 - **accelerated breed improvement programme** under the component subsidy of Rs 5000 per IVF pregnancy will be made available to participating farmers as GoI share;
 - **promoting sex sorted semen** under the component subsidy upto 50% of the cost of sex sorted semen will be made available to participating farmers and
 - **establishment of breed multiplication farm** under the component subsidy upto 50% of the capital cost maximum upto Rs.2.00 crore of the project will be made available to entrepreneur.

EMISSIONS DIP, GOVT MAY MAKE 'GREEN STEEL' MANDATORY: JYOTIRADITYA SCINDIA

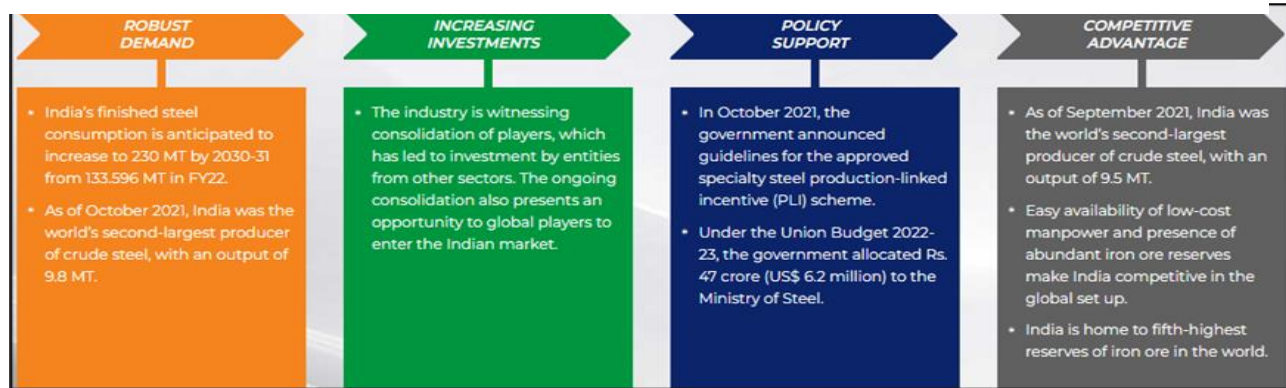
In News:

- Recently, the Union Minister of Steel told Rajya Sabha that the government was considering mandating the use of “**green steel**” in government projects.

India's iron and steel sector:

- **Overview:**
 - India has now become the **second largest crude steel producer** in the world (after China).
 - In the last 8 years, India has doubled its capacity to **~120 million tonnes** of production and it is projected to grow five times in the next two decades.
 - Per capita finished steel consumption in 2020 was 228 kg for the world and 691 kg for China and the same for **India was 70 kg in 2020-21.**
- **Policy support:**

- The Government has released the **National Steel Policy 2017**, which has laid down the broad roadmap for encouraging long term growth for the Indian steel industry, both on demand and supply sides, by 2030-31.



Factors responsible for the location, distribution of steel industries in India:

- **Raw materials:** For example, the abundance of iron ore in the **Chota Nagpur region** has resulted in a concentration of the iron and steel industry.
- **Nearness to market is important:** For instance, the Visakhapatnam steel plant, which is located near the shore, offers great import-export capabilities.
- **Availability of cheap labour:** The majority of the plants in the Chota Nagpur region benefit from an abundance of cheap labor.
- **Availability of water:** For example, Bokaro steel plant on the bank of river Damodar provides water for cooling.
- **Nearness to Industrial Town:** Mini steel plants that utilise scrap metals as input require waste metal recycling and are hence generally located near industrial areas.
- **Government incentives:** Like subsidies, tax rebates and capital, influences the location of industries. For example, Bhilai Steel Plant in Chhattisgarh was set up to remove the backwardness of the region.
- **Availability of power and transport infrastructure.**

The green steel:

- **About:** Essentially, green steel is the manufacturing of steel **without the use of fossil fuels**. This could help reduce the steel industry's **carbon footprint**, helping countries to achieve their **net-zero emissions targets**.
- **Ways of production:** By using -
 - **Green hydrogen**, which emits only water after burning and if it is produced via electrolysis using just water and renewable electricity, then it is completely free of CO₂ emissions.
 - **Electric arc furnaces**
- **Challenges:**
 - **All steel can't be green:** According to a report by the NGO Global Energy Monitor, the shift from traditional blast furnaces (coal-based) to electric arc furnaces is "stagnant" and significantly behind decarbonization targets.
 - **Availability of green hydrogen**
 - **The cost of green steel:** The clean hydrogen production at scale will require billions of dollars of investment in renewable power generation.
- **Way ahead:**
 - Speeding up the shift towards electric arc furnace steelmaking.
 - Scaling up the technology to produce green or blue hydrogen.

News Summary:

- **Emissions from the sector:**
 - The steel sector is extremely energy and resource intensive and is **highly polluting**. For **example**, India's current average emission intensity is 2.55 tonne CO₂, per tonne of crude steel, compared to about 1.95 tonne of global average.
 - The emissions from the steel industry have been **brought down by 15% between 2005 and 2022** and Centre targets an additional 10% reduction in emissions by 2030. Energy consumption per tonne of steel produced has also come down as well.
- **Efforts by the Indian government:**
 - The government has put into place a short-term plan, as well as medium and long-term targets to deal with the issue.

- **The short-term** plan looks at reduction of carbon emissions through energy and resource efficiency in renewable energy.
- **The medium-term** plan (2030-47) looks at Carbon Capture Utilization and Storage as well as usage of possibly green hydrogen.
- And, **the long-term plan** (2047-70) looks at a complete move over from ore-based and coal-based to much more technological innovations to come down to net zero.

PRADHAN MANTRI MATSYA Sampada YOJANA (PMMSY)

Pradhan Mantri Matsya Sampada Yojana envisages insurance coverage to fishers.



About:

- PMMSY was launched in September 2020 with an aim to double the income of fish farmers and fishers in the country. It focuses on sustainable development of India's fisheries sector and is a part of the **Atmanirbhar Bharat scheme**.
- The scheme focuses on activities with **potential to generate employment** such as seaweed and ornamental fish cultivation. It also emphasises on the **breeding technique** for quality brood, seed & feed and species diversification.

Implementation Strategy

- It is an **umbrella scheme with two separate Components** namely (a) **Central Sector Scheme (CS)** and (b) **Centrally Sponsored Scheme (CSS)**.
- The CSS Component is further segregated into **Non-beneficiary oriented and beneficiary orientated** subcomponents/activities under the following three broad heads:
 - Enhancement of Production and Productivity
 - Infrastructure and Post-harvest Management
 - Fisheries Management and Regulatory Framework
- PMMSY will be **implemented in all the States and Union Territories for a period of 5 (five) years from FY 2020-21 to FY 2024-25**.

Key Initiatives and Progress

- **PMMSY includes key activities** such as fishing vessel insurance, support for new/upgrade of fishing vessels, aquaculture in saline/alkaline areas, Sagar Mitras, nucleus breeding centres, fisheries and aquaculture start-ups, incubators, and integrated aqua parks.
- **PMMSY inter-alia provides insurance coverage to fishers** which includes fish workers, fish farmers and any other categories of persons directly involved in fishing and fisheries related allied activities. **The insurance coverage provided under the PMMSY includes**
 - 5,00,000/- against accidental death or permanent total disability
 - 2,50,000/- for permanent partial disability
 - Hospitalization expenses in the event of accident for a sum of Rs. 25,000/-.

Funding Plan:

- **Central Sector Scheme** – The entire scheme cost will be borne by the central govt. Also, in cases of direct beneficiary-oriented activities undertaken by central government entities such as the NFDB, central assistance will be up to 40% of the project cost for the general category and 60% for the SC/ST/women category.
- **Centrally Sponsored Scheme (CSS)** – In case of CSS components and subcomponents implemented by the states/UTs, the entire project cost will be shared between the centre and state.

FACIAL RECOGNITION TECHNOLOGY

With the expansion of the Internet, there is an increase in the facial recognition of biometric information, including information generated for purposes for facial recognition technology.



- Facial recognition refers to the **technology capable of identifying or verifying a subject through an image, video, or any audiovisual element** of the face. Generally, this identification is used to access an application, system, or service and it works like a face scanner.

- It is a method of **biometric identification** that uses that body measures, in this case, face and head, to verify the identity of a person through its facial biometric pattern and data.
- The technology collects a set of unique biometric data of each person associated with their face and facial expression to identify, verify and/or authenticate a person.

Biometric Facial Recognition Uses Cases

- Face identity recognition uses focus on **verification or authentication**. This technology is used, for example, in situations such as:
 - Second authentication factor, to add extra security in any log-in process.
 - Access to mobile applications without a password.
 - Access to previously contracted online services (login on online platforms, for example).
 - Access to buildings (offices, events, facilities of any kind).
 - Payment method, both in physical and online stores.
 - Access to a locked device.
 - Check-in in tourist services (airports, hotels...).

Benefits of Facial Recognition?

- **A fastest process:** facial recognition allows for fast and smooth remote identity verification.
- **User experience:** facial recognition systems offer a unique, smooth, and fast user experience, avoiding the need for time-consuming office visits or video conferences and wait times.
- **Security:** Like fingerprints or voice, each face is unique and has inimitable characteristics. Facial recognition systems, programs, or software compare through facial biometrics and facial recognition algorithms.
- **Compliance:** Facial recognition through video identification is the only method recognised as a standard for remote identity verification for high-risk operations (opening bank accounts, signing contracts, etc.).