



## India's 1st Green Hydrogen Plant in Stainless Steel Sector

**Context:** Union Minister for Steel and Civil Aviation, Sh. Jyotiraditya M. Scindia, virtually inaugurated India's inaugural Green Hydrogen Plant within the Stainless Steel Sector situated at Jindal Stainless Limited, Hisar.

### ➤ National Green Hydrogen Mission (NGHM):

- India's steel sector transitioned from a net importer to a net exporter, targeting to become the world's largest crude steel producer.
- The NGHM, launched with ₹20,000 crore, aims to position India as a global hub for green hydrogen production, usage, and export.
- Pilot projects in the steel sector receive support from the NGHM with a budget of ₹500 crore until FY 2029-30.

### ➤ Industry Transformation:

- The Minister lauded Hygenco and Jindal Stainless for commissioning India's first off-grid green hydrogen plant, aligning with the government's sustainability vision.
- The project creates employment opportunities while promoting responsible industrial practices.
- Industry stakeholders are urged to embrace clean technologies, contributing to India's journey towards a greener economy.

### ➤ Government Initiatives:

- Robust national green policies and 13 task forces focus on green steel production.
- Implementation of the Steel Scrap Recycling Policy enhances domestically generated scrap availability.
- Stakeholders are called upon to collaborate in building a globally competitive and sustainable steel industry.

### ➤ Project Details:

- The project marks the world's first off-grid green hydrogen plant for the stainless steel industry, integrating rooftop and floating solar.
- It targets a significant reduction in carbon emissions, aiming to cut around 2,700 metric tonnes annually and 54,000 tonnes of CO2 emissions over two decades.

### ➤ Stainless Steel

- Stainless steel is an alloy of iron and carbon, with a minimum of 10.5% chromium and less than 1.2% carbon, along with other alloying elements like nickel and molybdenum.
- When exposed to oxygen, stainless steel forms a protective chromium oxide layer, which repairs itself, ensuring corrosion resistance.
- It offers various surface finishes, from matte to bright, embossed, or tinted, making it popular in architecture and design.
- Stainless steel boasts strong mechanical properties, combining ductility, elasticity, and hardness, suitable for various metal forming processes and withstanding wear.

- It exhibits excellent fire resistance, maintaining structural integrity even at temperatures above 800°C.
- Stainless steel's corrosion resistance is attributed to the passive layer of chromium oxide that forms naturally on its surface, regenerating if scratched.
- Cleaning stainless steel is easy with common detergents, and it meets hygiene standards for items like cooking utensils.
- Stainless steel is highly recyclable, with a near 100% recovery rate in construction, making it environmentally friendly and suitable for sustainable building applications.

## Types of steel

| STEELS           | TYPES   | BENEFITS  | APPLICATIONS  |
|------------------|---|---|---|
| Carbon Steels    | Low-carbon steel, medium-carbon steel, high-carbon steel, ultra-high-carbon steel, Hardox steel | Affordable, solid and durable, can be heat treated to improve their properties, such as hardness and strength   | Oil & Gas industry, automotive industry, construction industry      |
| Stainless Steels | Ferritic, austenitic, martensitic, duplex stainless steel                                       | Highly resistant to corrosion and staining, solid and durable, easy to clean and maintain as well, can be heat treated to improve their properties, such as hardness and strength | Food and beverage industry, medical industry, construction industry |
| Tool Steels      | High-speed steel, water hardening steel, air-hardening steel, and oil-hardening steel           | Tough and resistant to wear   | Automotive industry, aerospace industry                             |
| Alloy Steels     | Low-alloy steels, medium-alloy steels, high-alloy steels  | Stronger and more durable than carbon steels; ability to withstand higher temperatures than carbon steel and stainless steel; can bear adverse industrial conditions              | Oil & Gas industry, automotive industry, kitchenware                |

## Venice Biennale

**Context:** The 60<sup>th</sup> Edition of Venice Biennale, often dubbed as the "Olympics of the art world," is scheduled to commence on April 20<sup>th</sup>.

- The international art exhibition, known as the "Olympics of the art world," attracts global attention and prestige.
- Curated by Adriano Pedrosa, the 2024 edition features 333 artists exploring the theme "Stranieri Ovunque" or "Foreigners Everywhere."
- Indian artists and a public collective are among the participants, adding to the diverse showcase of contemporary artistry.
- **Background of the Venice Biennale:**
  - Established in 1895, the Venice Biennale began as a celebration of Italian royalty's silver anniversary.
  - Over the years, it has evolved into a major art event, drawing over six lakh visitors annually.
  - The term "biennale" denotes a large-scale international exhibition held every two years, offering a platform for exploring contemporary ideas.
- **Historical Origin:**
  - Originating from Venice's city government's proposal in 1893, the Biennale aimed to honor King Umberto I and Queen Margherita of Savoy.
  - The inaugural exhibition in 1895 attracted over two lakh visitors, showcasing works by foreign and Italian artists.

## Face to Face Centres





5 March, 2024

- While early editions lacked specific curatorial themes, subsequent Biennales adopted thematic approaches to art exploration.

➤ **Format of the Biennale:**

- The Venice Biennale spans seven months and encompasses various components, including the central pavilion, national pavilions, and collateral events.
- The central pavilion, curated by the artistic director, serves as the main exhibition space, featuring selected artworks and artists.
- National pavilions, managed by individual countries, showcase their artistic contributions, often reflecting their cultural identity and artistic heritage.

➤ **India's Participation:**

- India's inaugural participation in the Venice Biennale dates back to 1954, marking the Embassy of India's first official exhibition.
- Subsequent editions featured Indian artists, such as Dayanita Singh, Riyas Komu, and Mrinalini Mukherjee, highlighting the nation's diverse artistic talent.
- Collateral events, including "iCon: India Contemporary" in 2005 and "My East is Your West" in 2015, facilitated cross-cultural dialogue and artistic exchange.

➤ **Noteworthy Exhibitions:**

- The 2011 exhibition organized by Lalit Kala Akademi showcased works by renowned Indian artists like Zarina Hashmi and Gigi Scaria.
- The 2019 Indian pavilion celebrated 150 years of Mahatma Gandhi through a curated selection of artworks representing his life and legacy.

➤ **India's Presence in 2024:**

- Indian artists, including Ram Kumar, SH Raza, and Jamini Roy, contribute to the central exhibition curated by Adriano Pedrosa.
- The Aravani Art Project, led by trans and cis women, represents contemporary Indian artistry, adding a unique perspective to the Biennale's diverse offerings.

Ghats (3,596), and the Shivalik Hills and Gangetic Plains (1,109).

- Madhya Pradesh leads in leopard numbers (3,907), followed by Maharashtra (1,985), Karnataka (1,879), and Tamil Nadu (1,070).
- Despite marginal overall population growth, maintaining the status quo is deemed satisfactory due to ongoing threats like poaching.

➤ **Decrease in Population in Certain Regions:**

- Shivalik Hills and Gangetic Plains experienced a 3.4% annual decline, dropping from 1,253 in 2018 to 1,109 in 2022.
- States like Odisha, Uttarakhand, Kerala, Telangana, Chhattisgarh, Bihar, and Goa also reported population decreases.
- Contributing factors include habitat loss, poaching, road accidents, and the rise in tiger populations, especially impacting areas like the Ramnagar Forest Division in Uttarakhand.

➤ **Benefits from Tiger Conservation Efforts:**

- Tiger conservation measures inadvertently support leopard population growth, notably in Central India and Eastern Ghats, with the largest leopard population.
- Protective measures implemented for tiger conservation contribute to higher leopard densities in Tiger Reserves compared to outside Protected Areas.
- Good prey base management in states like Madhya Pradesh aids in increasing leopard numbers.

➤ **Leopard-Human Conflict Concerns:**

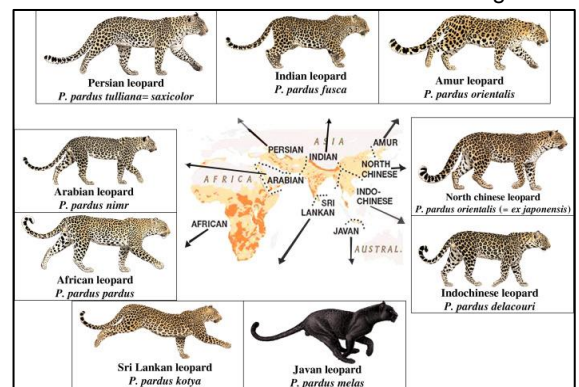
- Leopards' adaptability to various habitats leads to increased conflict with humans, particularly in areas like the Shivalik region where 65% of the leopard population resides outside protected areas.
- Maharashtra and Karnataka have reported the highest number of fatal attacks and human-leopard encounters, mainly due to habitat loss from human activities.
- Kerala, Uttar Pradesh, and Tamil Nadu also face significant human-leopard conflicts, attributed to factors like habitat encroachment and land use changes.

## Status of Leopards in India, 2022

**Context:** The Union Environment Ministry's 'Status of Leopards in India, 2022' report reveals a notable surge in the country's leopard population, reaching an estimated 13,874 compared to 12,852 in 2018.

➤ **Overview of Leopard Population in India:**

- Indian leopards, apex predators in forested habitats across India, Nepal, Bhutan, and parts of Pakistan, contribute significantly to ecosystem balance.
- Central India and Eastern Ghats host the highest leopard population (8,820), followed by the Western



## Face to Face Centres





## NEWS IN BETWEEN THE LINES

### The National Youth Parliament Festival



Youth Affairs and Sports Ministry will organise the finals (3<sup>rd</sup> edition) of the National Youth Parliament Festival in the Central Hall of the Parliament in New Delhi today.

#### About the National Youth Parliament Festival:

- The National Youth Parliament Festival (NYPF) is a **government initiative that aims to encourage young people to engage with public issues.**
- The festival is based on the idea given by the Prime Minister in his **Mann Ki Baat** Address.
- The festival spans from **February 9th to March 6th**, with the valedictory function scheduled for March 6th.
- The festival's **theme for 2024 is 'Young Voices: Engage and Empower for Nation's Transformation'.**
- The Youth Parliament is organized at **three levels, covering 785 districts** across the country.
- District Youth Parliament was held from **February 9th to 14th.**
- Winners of the District Youth Parliament participated in the State Youth Parliament from **February 19th to 24th.**
- Eighty-seven State-level winners will be assembling in New Delhi for the finals in the National Youth Parliament, out of which 29 will be speaking on given topics.

### Geological Survey of India



Recently, the Southern Region of the Geological Survey of India (GSI) celebrated its 174th foundation day at its headquarter in Hyderabad.

#### About the Geological Survey of India:

- The Geological Survey of India (GSI) is a **scientific agency** that conducts geological surveys and studies of India.
- It was established in **1851** as a Government of India organization under the Ministry of Mines.
- It is **one of the oldest** such organizations in the world and the **second oldest survey** in India after the Survey of India in **1767.**
- Initially focused on coal exploration, GSI expanded its scope under the leadership of **Sir Thomas Oldham** to include mapping of **rock types, geological structures** and relative ages of different rock types.
- Throughout the **19th and early 20th centuries**, GSI made significant contributions to **seismology** through detailed reports on Indian earthquakes.
- In **2017**, GSI initiated the first-ever aerial survey of mineral stocks, mapping mineral stocks up to a depth of 20 km using specially-equipped aircraft.
- The Geological Survey of India (GSI) designates **geo-heritage sites/national geological monuments** for protection and maintenance.
- These sites **encompass geo-relics, stratigraphic type sections, geological structures, geomorphic landforms and adjoining land.**

### Carl-Gustaf M4 Weapons



Recently, Swedish defence major Saab started construction of its new manufacturing facility at MET City in Haryana for its iconic Carl-Gustaf M4 weapons with a formal ground-breaking ceremony.

#### Carl-Gustaf M4 Weapons:

- The Carl-Gustaf M4 is a **shoulder-launched weapon system** used by the Indian Army.
- It's a **multi-role, lightweight and high-impact weapon** that's effective in all environments.
- It's a recoilless rifle that's been in service since **1976.**
- It offers a diverse array of **ammunition types, encompassing anti-armor, anti-structure, multi-role, anti-personnel and support rounds like smoke and illumination.**
- The system is attached with **standard clip-on telescopic sight**, with additional options, including open sight, red dot sight and advanced fire control devices.

### Inflammatory Bowel Disease



Recent research suggests that an infant's diet as young as one year old can influence their future risk of developing Inflammatory Bowel Disease.

#### About Inflammatory Bowel Disease:

- Inflammatory Bowel Disease (IBD) refers to **disorders characterized by inflammation** of the digestive tract lining.
- There are two main types of IBD: **ulcerative colitis affecting the large intestine and rectum and Crohn's disease primarily affecting the small intestine.**
- Factors contributing to the development or worsening of IBD include **diet, age, family history, cigarette smoking and certain medications.**
- Changing diet patterns have been linked to changing prevalence patterns of IBD, with **processed food consumption** associated with higher incidence.
- High intake of **vegetables and fish in infancy is associated with lower future risk**, while **consumption of sugar-sweetened beverages is linked to higher risk.**
- Suggestions for preventive measures include **adopting a diet rich in fruits, vegetables and fish**, while minimizing consumption of sugar-sweetened beverages.

## Face to Face Centres





## National Dolphin Research Centre



Recently, the National Dolphin Research Centre (NDRC) was inaugurated by Bihar Chief Minister Nitish Kumar.

### About National Dolphin Research Centre:

- National Dolphin Research Centre is **India's first centre** for research on conserving the **endangered Gangetic river dolphin**, located close to Ganga river at Patna in Bihar.
- It is operational and **aims to assist scientists and researchers in conducting comprehensive studies on Gangetic dolphins**.
- Research at the NDRC covers various aspects such as changing **behavior, survival skills, food habits, causes of death** and more.
- The centre also **provides training to fishermen on dolphin conservation** during fishing activities, contributing to broader conservation efforts.
- The project **received approval in 2013** and faced delays before construction began after receiving clearance from the state urban development department.

### The Gangetic River Dolphin:

- The Gangetic river dolphin is a **freshwater species** and one of the few river dolphins found globally.
- It inhabits the **Ganges-Brahmaputra-Meghna** and **Karnaphuli-Sangu river** systems in **Nepal, India** and **Bangladesh**.
- One of four freshwater dolphin** species globally, alongside those found in the **Yangtze river** (now extinct), the **Indus river**, and the **Amazon river**.
- It is known by various names, including **Blind dolphin, Ganges dolphin, Ganges susu, Hihu, side-swimming dolphin** and **South Asian River Dolphin**.
- It is classified as a **Schedule I animal under the Wild Life (Protection) Act, 1972**.
- It has declared an **endangered species** by the International Union for Conservation of Nature.
- Bihar** is home to approximately half of the **estimated 3,000 Gangetic dolphins** in India.

## Dry Ice



Recently, five people were hospitalized after being mistakenly served 'dry ice' as mouth freshener, at Gurgaon in Haryana.

### About Dry Ice:

- Dry ice is the **solid form of carbon dioxide (CO<sub>2</sub>)**, created by compressing and cooling gaseous carbon dioxide.
- It is a **lethal substance** that must never be touched or ingested, as it can cause severe damage to skin and internal organs.
- Contact with dry ice **can cause chemical burns** and frostbite due to its extremely low temperature of **-78.5°C (-109.3°F)**.
- Ingestion or inhalation of dry ice can **lead to respiratory issues and potentially fatal carbon dioxide poisoning**.
- It is **commonly used as a cooling agent for preserving food items, such as ice cream and frozen desserts**, without the need for mechanical cooling.
- Regulatory bodies such as the **Food Safety and Standards Authority of India (FSSAI)** and the **United States Food and Drug Administration (FDA)** issue warnings and guidelines regarding the safe handling of dry ice in food service establishments.

## POINTS TO PONDER

- Which state government recently announced the establishment of a State Water Information Centre (SWIC)? – **Odisha**
- In which state is the Sindri Fertiliser Plant, which has been in the news recently, located? – **Jharkhand**
- Which state recently achieved the milestone of issuing five crore Ayushman cards under AB-PMJAY, becoming the first to do so? – **Uttar Pradesh**
- Where is the Amrabad Tiger Reserve, which has been in the news recently, located? – **Telangana**
- Where was the 66th meeting of Network Planning Group (NPG) held? – **New Delhi**

## Face to Face Centres

