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## World's Most Powerful Hydrogen Train Engine | Haryana | 17 Jan 2025

### Why in News?

Recently, **the Union Railway Minister** announced that India has achieved a significant milestone in **green energy** leadership by **developing the world's most powerful hydrogen-powered train engine**.

- The hydrogen-powered train engine will undergo its **first trial run on the Jind-Sonipat route in Haryana**.

### Key Points

- **Key Features of India's Hydrogen Train Engine:**
  - **Power Output:** 1,200 horsepower, surpassing global counterparts.
  - **Technology:** Fully developed using indigenous expertise.
  - **Green Milestone:** Marks a significant step in India's transition to hydrogen-powered transportation.
- **Global Leadership:**
  - Only four countries—**Germany, France, Sweden, and China**—currently operate hydrogen-powered trains, **delivering a power output of 500-600 horsepower**.
  - India's indigenously developed hydrogen engine surpasses these with a power output of 1,200 horsepower, the highest in its category.
- **Indigenous Development:**
  - The **engine was developed entirely by indigenous expertise**, showcasing the country's innovation in **clean energy solutions**.
  - This achievement is a **step toward India leading major economies** in green energy-driven growth.

### Green Energy

- Green energy is defined as energy derived from **renewable sources**. It is also known as clean, sustainable, or renewable energy.
- Green energy generation emits no dangerous **greenhouse gases** into the atmosphere, resulting in **little or no environmental impact**.
- **Solar, wind, geothermal, biogas, low-impact hydroelectricity**, and certain qualified biomass sources are all key green energy sources.

## Why in News?

Recently, a rare bird species, the **Falcated Duck** was spotted by bird watchers and nature enthusiasts at [Sultanpur National Park](#) in Gurugram.



## Key Points

- **Falcated Duck:**
  - **The Falcated Teal (*Mareca falcata*)**, also known as the Falcated Duck, is a dabbling duck.
  - **Distribution:**
    - Found from **eastern Siberia and Mongolia to northern Japan.**
    - Wintering grounds include **Southeast Asia and eastern India.**
    - **Rare sightings** have also been recorded in **America, Poland, and Thailand.**
  - **Habitat:**
    - Prefers **freshwater lakes, ponds, rivers, and marshes** surrounded by forests.
  - **Breeding:**
    - The breeding season lasts from **May to early July.**
    - Nests are built on the ground near water, typically in tall grass or brush.
  - **Diet:**
    - Primarily **herbivorous, feeding on vegetable matter, seeds, rice, and aquatic plants.**
    - Occasionally consumes small invertebrates and soft-shelled mollusks.
  - **Threats:**
    - **Hunting** is a major threat, driven by demand for their meat and feathers.
  - **Conservation Status:**
    - Listed as "**Near Threatened**" by [the International Union for Conservation of Nature \(IUCN\)](#).

## Sultanpur National Park

- **About:**
  - Sultanpur National Park is a bird paradise for bird watchers. It is famous for its **migratory as well as resident birds.**
    - Migratory birds start arriving in the park in September. Birds use the park as a resting place till the following March-April.
    - During **summer and monsoon months** the park is inhabited by many local bird species.
  - In April 1971, [the Sultanpur Jheel](#) inside the park (an area of 1.21 sq. Km.) was accorded **Sanctuary status** under section 8 of **the Punjab Wildlife Preservation Act**,

**1959.**

- The status of the park was upgraded to **National Park** under **the Wildlife (Protection) Act, 1972** in July 1991.

▪ **Location:**

- It is situated in **Gurgaon district of Haryana**. The distance of the park is around 50 Km from Delhi and 15km from Gurgaon.

▪ **Important Fauna at the Park:**

- Mammals: **Blackbuck, Nilgai**, Hog deer, Sambar, **Leopard** etc.
- Birds: **Siberian Cranes, Greater Flamingo, Demoiselle Crane** etc.

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