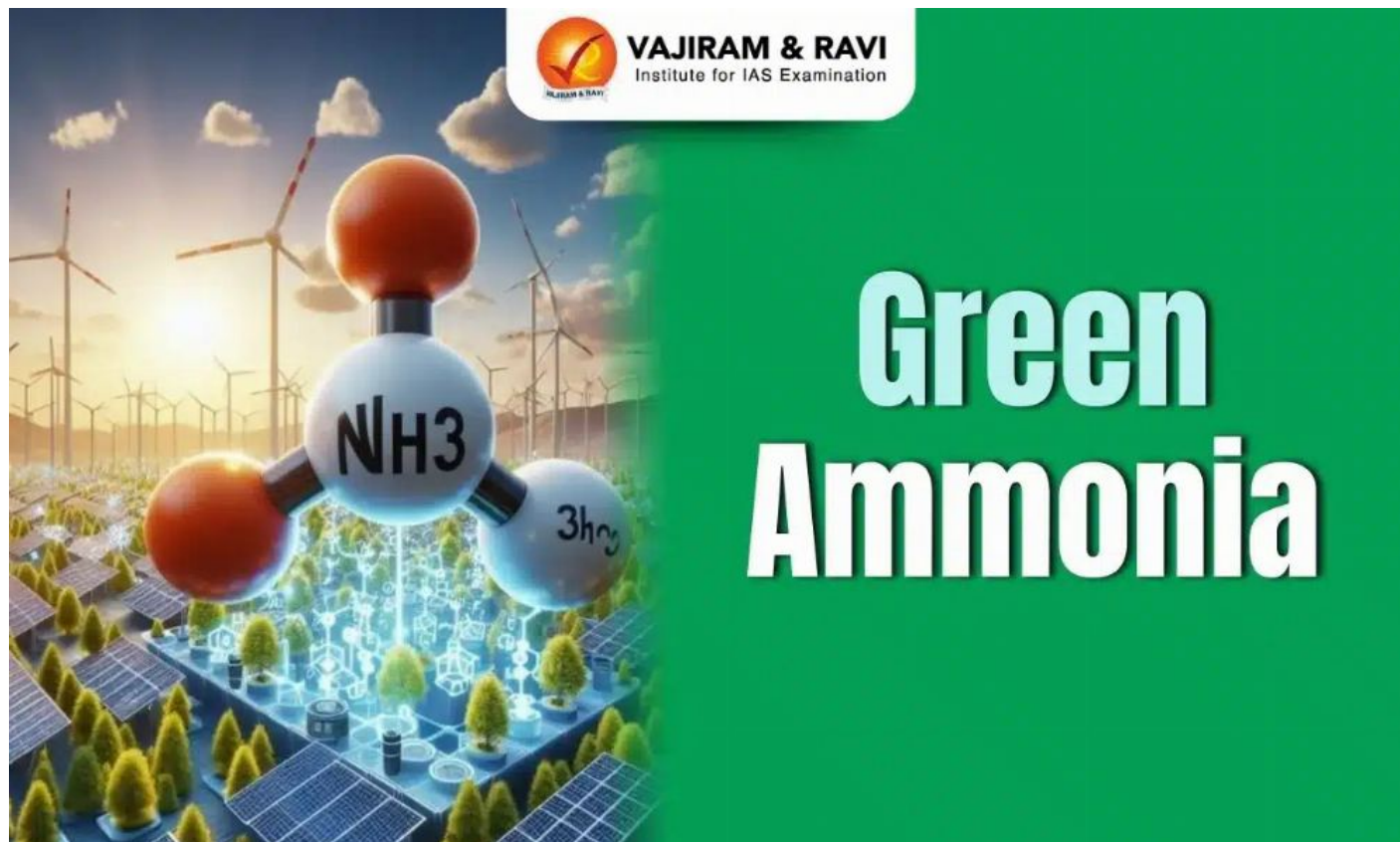


Green Ammonia

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Green Ammonia Latest News

Larsen & Toubro's (L&T), green molecules arm L&T Energy Greentech, recently bagged the tender for building India's biggest green hydrogen plant at Indian Oil Corporation Ltd's (IOCL) Panipat refinery.

About Green Ammonia

- **Ammonia (NH₃)** is a nitrogen and hydrogen based chemical compound widely used in the production of fertilisers and industrial chemicals.
- Ammonia is **currently produced from natural gas** and, in its production process, **emits 2 tonnes of CO₂ for every tonne of ammonia**.
- For this reason, conventional ammonia is **referred to as grey ammonia**.
- **Green ammonia**, on the other hand, **does not emit CO₂ in its production process**.

Green Ammonia Production Process

- To produce green ammonia, **green hydrogen** must first be **obtained through** a process of **water electrolysis**.
- That is, **water** is **decomposed into hydrogen and oxygen**, using electrical energy generated from renewable sources.
- The hydrogen is then **combined with atmospheric nitrogen** through a process known as **Haber-Bosch synthesis**, which allows hydrogen and nitrogen to react at **high pressure and temperature** in the **presence of a catalyst** to form ammonia.
- The **end result** is the production of **green ammonia** using green hydrogen and atmospheric nitrogen.
- Green ammonia production is where the process of making ammonia is **100% renewable and carbon-free**.

Green Ammonia Applications

- It is widely used in the **production of agricultural fertilisers** as ammonia is an essential **source of nitrogen for plant growth**.
- It is also used as a **raw material** in the production of a variety of **chemical products**, such as **nitric acid, synthetic fibres, explosives, dyes, and pharmaceuticals**.
- It can be used in **fuel for engines** such as locomotives and shipping, replacing diesel and marine fuel oil.
- It can be used as a **fuel source for electricity power generation**.

Source: MC

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