



# Compressed Biogas Plant in Gwalior

## Why in News?

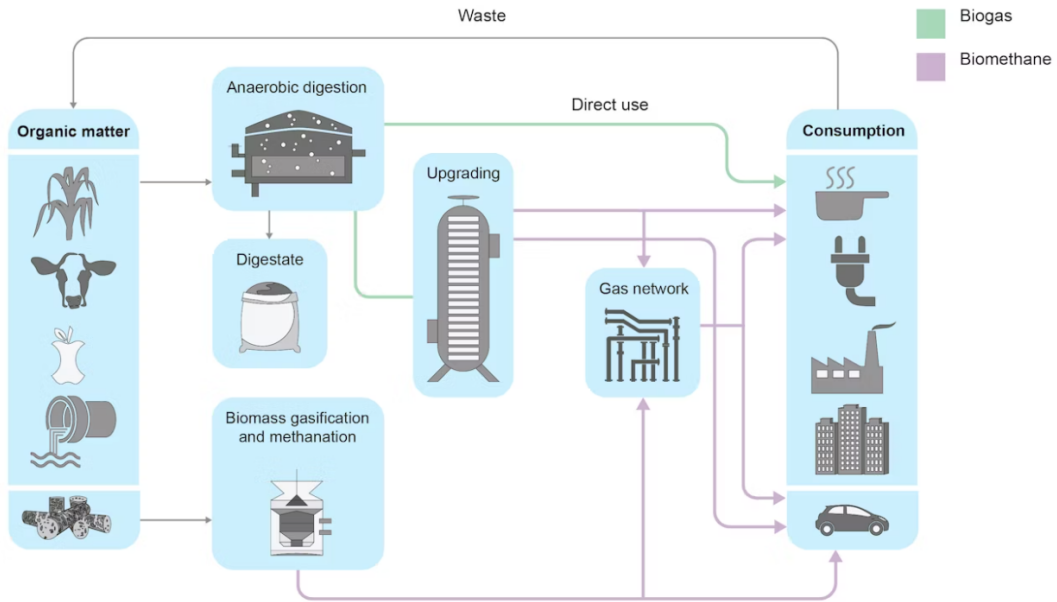
Recently, **India's first modern and self-sufficient gaushala** with a state-of-the-art **Compressed Biogas (CBG) plant** was launched in Gwalior, Madhya Pradesh.

## Key Points

- **Location and Management:**
  - The CBG plant is located at **Adarsh Gaushala**, the **largest cowshed in Gwalior, managed by the Gwalior Municipal Corporation**. It houses over **10,000 cattle**.
- **Unique Achievement:**
  - **Madhya Pradesh's first CBG plant** producing **biogas from cattle dung and organic waste** like vegetable and fruit waste collected from local mandis and homes.
  - **Technology and Output:**
    - **Produces 2-3 tons of Bio-CNG daily** from 100 tons of cattle dung.
    - **Generates 10-15 tons of dry bio-manure daily**, supporting organic farming.
    - Incorporates **windrow composting** for additional organic waste processing.
      - **Windrow composting** is a method of composting organic waste that involves **stacking the waste into long, narrow piles called windrows** and regularly turning them.
      - It is considered to be a **cost-effective method of composting**, but it can also produce the most emissions.
- **Environmental Benefits:**
  - Converts cow dung and organic waste into **Bio-CNG and organic manure, reducing carbon emissions** significantly.
  - Provides a **cleaner, eco-friendly alternative to fossil fuels**, contributing to **climate change mitigation**.
  - Transforms underutilized resources like cow dung into valuable energy and fertilizer, **promoting circular economy practices**.
- **Economic and Social Impact:**
  - **Creates jobs for locals, boosting the economy** while promoting green energy skills.
  - Provides affordable **bio-manure to farmers** in nearby districts, encouraging organic farming practices.
- **Model for Sustainable Development:**
  - As **India's first self-reliant gaushala**, the Laltipara plant serves as a **pioneering model for other regions to adopt**.

## Biogas

- Biogas is a renewable energy source that's produced when organic matter breaks down in the absence of oxygen. This process is called **anaerobic digestion**.
- Biogas is also known as **renewable natural gas (RNG) or biomethane**. It's made up of mostly **methane (CH<sub>4</sub>) and carbon dioxide (CO<sub>2</sub>)**.



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