



India's First Bamboo-Based Ethanol Plant

[Source:TH](#)

The Prime Minister inaugurated India's first **bamboo-based bioethanol plant** in Golaghat, Assam, marking a major step toward **energy self-sufficiency and green energy promotion**.

- **Economic Impact:** Bioethanol plant will source **5 lakh tonnes of bamboo annually** from Assam and other northeastern states. The project will **benefit local farmers and tribal communities**, providing a **Rs 200-crore boost** to Assam's rural economy.
 - After the amendment to the [Indian Forest Act, 1927](#), **bamboo is no longer classified as a tree**, lifting the ban on its cutting. This change supports the **livelihoods of forest communities** and private growers.
 - It aligns with **India's Viksit Bharat vision**, focusing on [hydrocarbon exploration and green energy initiatives](#), and aims to reduce dependence on **fossil fuels**.
- **Bioethanol:** It is a **high-octane biofuel (C₂H₅OH)** produced biologically from biomass like **corn, sugarcane, grains, bamboo and vegetable residues**.
 - It is mainly used as a gasoline additive, with engines now capable of burning pure ethanol.
 - Key production steps include fermentation of sugars, pretreatment of starch or cellulose, distillation, and dehydration to fuel-grade ethanol.

ETHANOL AS A FUEL

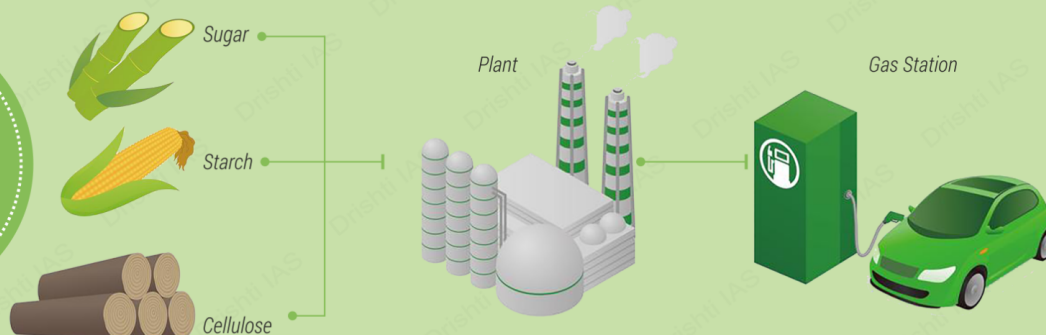
About Ethanol

- One of the principal biofuels
- Also called ethyl alcohol (C_2H_5OH)

Produced

- Naturally by fermentation of sugar (or corn, rice etc)
- By petrochemical processes (ethylene hydration)

World Biofuel Day is celebrated on 10 August to raise awareness about the importance of non-fossil fuels.



Ethanol Blending

Blending ethanol with petrol to burn less fossil fuel while running vehicles.

Blending Target

- 20% ethanol blending in petrol (E20) by 2025

Currently, ethanol makes up 10% of the petrol used in vehicles.

Significance

- Reduce oil imports
- Equivalent efficiency at a lower cost than petrol
- Burns completely and cleaner than petrol
- Ethanol produced from farm residue to boost farmers' income

Challenges in Success

- High land requirement for sugarcane (+ consequent food prices issue)
- High water requirement of biofuel crops

Related Initiatives

- Roadmap for Ethanol Blending in India (Report by NITI Aayog) (2021)
- E100 Pilot Project (Network for production and distribution of ethanol) (2021)
- Pradhan Mantri **JI-VAN** Yojana (to boost 2G ethanol projects) (2019)
- The National Policy on Biofuels (2018)

Read more: [India Achieves 20% Ethanol Blending in Petrol](https://www.drishtiias.com/printpdf/india-s-first-bamboo-based-ethanol-plant)