

# Haryana to tackle stubble burning with its 2G ethanol plant

August 17, 2022

**In news**– On the occasion of World Biofuel Day, the Prime Minister of India dedicated the 2nd generation (2G) Ethanol Plant in Panipat, Haryana to the nation.

## About the plant-

- **Built by the Indian Oil Corporation at the cost of over Rs 900 crore**, the plant, based on indigenous technology, is located close to the Panipat refinery.
- **It aims to utilise about 2 lakh tonnes of rice straw (crop-residue) annually** to generate around 3 crore litres of ethanol annually.
- The project will have **zero liquid discharge**. By reducing the burning of rice straw (crop-residue), the **project will reduce greenhouse gases equivalent to about 3 lakh tonnes of carbon dioxide**-equivalent emissions per year.
- Simply put, this is like taking away nearly 63,000 cars annually from the country's roads.
- The **plant would generate ethanol by using paddy straw as raw material**. It will help in management of paddy straw leading to lesser requirement of in-situ management.
- The biofuel plant will be able to get rid of stubble without burning it especially in **Haryana, Delhi region**.
- Government says that creating an end-use for the agri-crop residue would empower farmers and provide an additional income generation opportunity.

## What is Ethanol?

- Ethanol, an anhydrous ethyl alcohol having the chemical formula of  $C_2H_5OH$ , can be produced from sugarcane, maize, wheat, etc which are high in starch content.
- In India, ethanol is mainly produced from sugarcane molasses by fermentation process.
- Ethanol can be mixed with gasoline to form different blends.
- As the ethanol molecule contains oxygen, it allows the engine to more completely combust the fuel, resulting in fewer emissions and thereby reducing the occurrence of environmental pollution.
- Since ethanol is produced from plants that harness the power of the sun, ethanol is also considered as renewable fuel.

### **Ethanol Blended Petrol Programme-**

- Ethanol Blended Petrol (EBP) programme was launched in January, 2003.
- The programme sought to promote the use of alternative and environment friendly fuels and to reduce import dependency for energy requirements.

### **Types of biofuels-**

Biofuels are usually classified as follows:

1. First-generation biofuels are directly related to a biomass that is generally edible.
2. Second-generation biofuels are defined as fuels produced from a wide array of different feedstock, ranging from lignocellulosic feedstocks to municipal solid wastes.
3. Third-generation biofuels are, at this point, related to algal biomass but could to a certain extent be linked to utilization of  $CO_2$  as feedstock.