

LOK SABHA
UNSTARRED QUESTION No. 2223
TO BE ANSWERED ON 12th February, 2026

PROMOTION OF ETHANOL PRODUCTION

2223. SHRI RAMASAHAYAM RAGHURAM REDDY:

पेट्रोलियम और प्राकृतिक गैस मंत्री

Will the Minister of PETROLEUM AND NATURAL GAS be pleased to state:

- (a) the steps undertaken by the Government to boost ethanol production in order to meet its targets under the Ethanol Blended Petroleum (EBP) Programme;
- (b) whether the Government has a blueprint for promotion of 3G ethanol production, if so, the details thereof; and
- (c) whether the Government is working on developing technologies to increase the conversion efficiency of ethanol produced from lignocellulosic biomass and if so, the details thereof?

ANSWER

पेट्रोलियम और प्राकृतिक गैस मंत्रालय में राज्यमंत्री
(श्री सुरेश गोपी)

**MINISTER OF STATE IN THE MINISTRY OF PETROLEUM & NATURAL GAS
(SHRI SURESH GOPI)**

(a): Government have taken several measures to increase ethanol production in the country to achieve 20% blending of ethanol in petrol, which *inter-alia* includes expansion of feedstock for Ethanol production, administered price mechanism for Ethanol procurement under the Ethanol Blended Petrol (EBP) Programme, lowered GST rate to 5% for Ethanol for EBP Programme, introduction of various Ethanol Interest Subvention Schemes (EISS) during 2018-22, a dedicated subvention scheme for Cooperative Sugar Mills to convert existing sugarcane-based distilleries into multi-feedstock plants for ethanol production from molasses as well as grains, signing of 233 Long Term Offtake Agreements (LTOAs) between OMCs and Dedicated Ethanol Plants, allocation of 72 Lakh Metric Tonne (LMT) of surplus Food Corporation of India (FCI) rice for ethanol production for the ESY 2025-26, diversion of 40 LMT of sugar for ethanol production for the ESY 2024-25 and unrestricted production of ethanol from sugarcane juice/sugar syrup, B-Heavy Molasses as well as C-Heavy Molasses for ESY 2025-26, notified the “Pradhan Mantri JI-VAN (Jaiv Indhan- Vatavaran Anukool fasal awashesh Nivaran) Yojana” to provide financial assistance for setting up Advanced Biofuels projects in the country using lignocellulosic biomass and other renewable feedstock, multimodal transportation of ethanol and increasing ethanol storage capacity along with other allied infrastructure for handling of higher blends of ethanol.

(b) & (c): With an objective to broaden the scope of the scheme to incorporate Advanced Biofuels including Third Generation (3G) Ethanol, the Government has amended the PM JI-VAN Yojana in 2024 to provide financial support for setting up Advanced Biofuels projects in the country using lignocellulosic biomass and other renewable feedstock. The PM JI-VAN scheme envisages setting up of about 12 commercial Advanced Biofuel Projects and about 10

demonstration scale Advanced Biofuel Projects. The purpose of supporting Demonstration projects is to enthuse Technology providers to display viability & performance of their novel technologies thereby indigenization of advanced biofuel technologies and to address, *inter-alia*, the challenge of higher conversion process cost of lignocellulosic biomass to ethanol as compared to the conventional molasses to ethanol process. Indian Oil Corporation Limited (IOCL) has established a 3G ethanol plant of 128 Kilo litre per day capacity at Panipat, Haryana, using refinery off-gas as feedstock, which is currently under stabilization.

Department of Biotechnology (DBT) has informed that they have supported research and innovation projects focused on developing technologies to enhance the conversion efficiency of ethanol made from lignocellulosic biomass by providing advanced biocatalytic solutions and indigenous bioprocesses. DBT through Biotechnology Industry Research Assistance Council (BIRAC) has supported setting up of a 10 tonnes lignocellulosic biomass per day processing plant to produce about 3,000 litres of ethanol per day and the development of a novel cocktail of cellulosic enzymes.

IOCL R&D has also developed a 2G ethanol technology with integrated enzyme production and mechanically completed a 10 tonnes per day demonstration plant at Panipat, integrated with onsite enzyme production, utilizing biomass feedstocks such as rice straw, wheat straw, and bagasse. Bharat Petroleum Corporation Limited (BPCL) has developed and successfully demonstrated an in-house 2G ethanol process using lignocellulosic biomass. Hindustan Petroleum Corporation Limited (HPCL) has taken initiative to develop 2G technology and in-house enzyme development to improve overall viability of the process.
