

LOK SABHA
UNSTARRED QUESTION No. 2007
TO BE ANSWERED ON 30th July, 2026

WATER SUSTAINABILITY AND FEEDSTOCK USE IN ETHANOL PRODUCTION

2007. SHRI THIRU D M KATHIR ANAND:

पेट्रोलियम और प्राकृतिक गैस मंत्री

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

- (a) the details of studies conducted by the Government regarding the water footprint associated with ethanol production from sugarcane, maize, paddy and other feedstocks, the implications thereof for groundwater resources, irrigation demand, agricultural sustainability and water security, with specific reference to Tamil Nadu;
- (b) the comparative assessment available regarding water consumption, ethanol yield and environmental sustainability of various feedstocks used under the Ethanol Blended Petrol Programme;
- (c) the measures adopted/proposed by the Government for encouraging water-efficient feedstocks, utilisation of agricultural residues, second-generation biofuels and other sustainable alternatives for ethanol production;
- (d) the details of funds allocated, released and utilised by the Government under ethanol-blending, biofuel development and related infrastructure programmes during the last five years, year-wise; and
- (e) the safeguards adopted by the Government to balance energy security objectives with concerns relating to food security, water conservation and sustainable agricultural practices?

ANSWER

पेट्रोलियम और प्राकृतिक गैस मंत्रालय में राज्य मंत्री
(श्री सुरेश गोपी)

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

(a) to (e): An expert committee was constituted in 2024 by Ministry of Agriculture and Farmers Welfare to examine the water consumption of various ethanol feedstock crops. The Report has found that water requirement is maximum for Rice followed by Maize and Sugarcane.

The Government has adopted a balanced approach to the Ethanol Blended Petrol (EBP) Programme, ensuring that water sustainability, food security and farmers' interests remain paramount.

The Government follows a diversified feedstock strategy under the National Policy on Biofuels. Ethanol is produced from multiple approved feedstocks, including sugarcane-based feedstocks, maize, damaged foodgrains, broken rice, foodgrains unfit for human consumption, surplus foodgrains approved by the National Biofuel Coordination Committee (NBCC) and other approved agricultural feedstocks. The Government is also promoting Second Generation (2G) ethanol from agricultural residues under the Pradhan Mantri JI-VAN Yojana to progressively increase the use of non-food feedstocks.

The diversion of foodgrains for ethanol production is carefully calibrated in consultation with the Department of Food & Public Distribution and other concerned Ministries. Food security, Public

Distribution System (PDS) requirements, National Food Security Act (NFSA) obligations, Other Welfare Schemes (OWS) and prescribed buffer stocks are accorded the highest priority. Only surplus foodgrains, after meeting these requirements, are permitted for ethanol production. The Government is also promoting crop diversification towards comparatively less water-intensive feedstocks such as maize and encouraging sustainable agricultural practices so that expansion of ethanol feedstocks remains balanced with the production of pulses, oilseeds and other essential food crops.

Water-use efficiency is also being enhanced through micro-irrigation, drip irrigation and other water conservation measures under the *Per Drop More Crop* component of the Pradhan Mantri Krishi Sinchayee Yojana. Many sugar mills are also encouraging farmers to adopt water-efficient cultivation practices.

Molasses-based distilleries with incineration boilers and grain-based distilleries are required to operate as Zero Liquid Discharge (ZLD) units, enabling recycling and reuse of process water while eliminating liquid effluent discharge. Modern ethanol plants typically consume about 3–5 litres of processed water for producing one litre of ethanol.

The details of funds allocated, released and utilised for bio-ethanol (2G) project under PM JI-VIAN Yojana are as under :

All figures are in Rs. Crore

Year	Approved Budget	Fund Disbursed to Project Developers
2021-22	189.38	150
2022-23	83.34	37.5
2023-24	151.99	75.00
2024-25	30.00	7.50
2025-26	37.875	37.5

Further, financial assistance has been approved for two commercial scale and one demonstration scale 2G Ethanol project in June 2026.
