

Quote By Anurag Singh, Advisor, Primus Partners

Published in The Hindu Business line

September 02, 2025 | 05:36 PM IST

BL Explainer: Will E20 fuel vroom ahead with removal of restriction on ethanol production?



Authored by Anupama Ghosh

Read on: <https://www.thehindubusinessline.com/blexplainer/understanding-e20-fuel-a-comprehensive-analysis/article70003202.ece>

Article Content:

India's ethanol production capacity has received significant policy support through the recent government decision to lift all restrictions on ethanol production from sugarcane-based sources for 2025-26

Why is recent government decision to lift restrictions on production of ethanol important for E20 fuel?

The recent decision to lift all restrictions on ethanol production from sugarcane juice, sugar syrup, and molasses for the 2025-26 ethanol supply year demonstrates Centre's commitment to achieving India's target of 20 per cent ethanol blending in petrol by 2025, with potential expansion to 30 per cent thereafter.

What is E20 fuel?

E20 fuel is a gasoline blend containing 20 per cent ethanol and 80 per cent petrol. This biofuel mixture represents India's strategic initiative to reduce petroleum imports, enhance energy security, and promote cleaner combustion. The ethanol component is typically derived from sugarcane juice, sugar syrup, or molasses, making it a renewable fuel additive that supports agricultural sectors.

Is E20 fuel better than petrol?

E20 fuel presents a mixed performance track record compared to pure petrol. While it offers environmental benefits through reduced carbon emissions and supports energy independence, it delivers lower energy density than conventional petrol. The Ministry of Petroleum and Natural Gas acknowledges that ethanol's lower energy content results in marginal mileage reduction. However, E20 contributes to cleaner combustion, potentially reducing harmful exhaust emissions and

supporting India's environmental commitments.

Is E20 fuel safe for vehicles?

Vehicle safety with E20 fuel depends heavily on compatibility and design specifications. Modern vehicles manufactured after April 2023 by leading manufacturers like Hero MotoCorp are typically designed with E20-compatible materials. However, older vehicles face significant challenges due to ethanol's corrosive properties.

Industry experts highlight serious concerns about E20's impact on non-compatible vehicles. Anurag Singh from Primus Partners explains that ethanol absorbs moisture, leading to phase separation and corrosion in metal components including fuel tanks, pipes, injectors, engines, and exhaust systems. Additionally, ethanol degrades rubber and plastic components such as seals, gaskets, and fuel hoses that lack ethanol resistance.

The corrosive nature extends to engine management systems. If Electronic Control Units (ECU) or Programmed Fuel Injection (PGM-FI) systems aren't calibrated for E20, vehicles may experience poor combustion, engine knocking, reduced performance, and difficult cold starts due to altered air-fuel ratios.

Does E20 fuel really impact mileage?

Mileage impact from E20 fuel is confirmed but varies by vehicle type and compatibility. The Ministry of Petroleum and Natural Gas provides specific estimates: four-wheelers designed for E10 fuel but calibrated for E20 experience 1-2 per cent mileage reduction, while other vehicles may see 3-6 per cent decreased fuel efficiency.

This mileage reduction stems from ethanol's lower energy density compared to petrol. However, the Ministry suggests that improved engine tuning and E20-compatible materials can minimise efficiency drops. Leading automobile manufacturers have already adopted these technologies in newer vehicle models.

Can India produce enough ethanol for E20?

India's ethanol production capacity has received significant policy support through the recent government decision to lift all restrictions on ethanol production from sugarcane-based sources for 2025-26. This policy reversal addresses previous supply constraints that limited ethanol availability during 2023-24 due to reduced sugarcane supplies.

The favorable monsoon conditions boosting sugarcane production prospects, combined with unrestricted production permissions, suggest improved ethanol supply capabilities. Sugar mills and distilleries can now optimise their output without quantitative limitations, directly supporting the national target of 20 per cent ethanol blending by 2025, with potential expansion to 30 per cent thereafter.

What are the retrofit requirements for existing vehicles

The transition to E20 fuel necessitates substantial retrofitting for existing vehicle fleets. Hero MotoCorp explicitly states that vehicles manufactured before April 2023 may require engine and fuel system modifications for efficient E20 operation. Specific components requiring replacement include rubber parts, elastomers, plastic components, gaskets, O-rings, and fuel tubes with E20-compatible materials.

TVS Motor similarly acknowledges ethanol's corrosive properties affecting various materials. The Federation of Automobile Dealers Association reports isolated incidents of fuel injector choking

with E20, though these remain manageable. However, concerns escalate with higher ethanol concentrations like E30 or E40.

How did India's ethanol blending journey evolve?

The ethanol blending programme has shown remarkable growth over the past decade, increasing from 38 crore litres in ESY 2013-14 to over 500 crore litres in ESY 2022-23, with blending percentage rising from 1.53 per cent to 12.06 per cent. This initiative has delivered substantial benefits, including savings of ₹99,014 crore in foreign exchange, reduction of 519 lakh tonne CO₂ emissions, and substitution of 173 lakh tonne crude oil.

The September 2025 policy reversal lifting all restrictions on ethanol production represents renewed commitment to the blending programme, addressing earlier supply constraints while acknowledging the practical timeline adjustments necessitated by vehicle compatibility challenges.