

GOVERNMENT OF INDIA
MINISTRY OF PETROLEUM AND NATURAL GAS
RAJYA SABHA
UNSTARRED QUESTION No.139
ANSWERED ON 20/07/2026

IMPACT OF ETHANOL BLENDING IN PETROL

139. SHRI RAJEEV SHUKLA:

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

- (a) whether Government has conducted any research by any expert agency before ethanol blending in petrol;
- (b) if so, the details thereof;
- (c) whether Government is aware of the impact of ethanol blending on mileage, efficiency and longevity of vehicles;
- (d) if so, the details thereof;
- (e) whether there is any proposal to increase ethanol percentage in petrol and / or to introduce ethanol in diesel; and
- (f) if so, the details thereof;

ANSWER

THE MINISTER OF STATE IN THE MINISTRY OF PETROLEUM & NATURAL GAS

(SHRI SURESH GOPI)

(a) & (b) The Ethanol Blended Petrol (EBP) Programme has been implemented through a phased, calibrated, scientifically validated and consultative approach.

Ethanol is not a new fuel; it has been used globally for over a century and India's EBP Programme commenced with a pilot in 2001. The ethanol transition was based on a comprehensive roadmap prepared by NITI Aayog in consultation with the Ministry of Petroleum & Natural Gas, Oil Marketing Companies, automobile manufacturers, Automotive Research Association of India (ARAI), Society of Indian Automobile Manufacturers (SIAM), Indian Institute of Petroleum (IIP), Dehradun and other technical institutions.

Before the introduction of E20, extensive laboratory studies, durability trials and field validation were undertaken covering engine durability, material compatibility, fuel systems, corrosion resistance, drivability, emissions, fuel economy and overall vehicle performance.

E20-compatible vehicles are approved only after undergoing the prescribed homologation process, in which they are extensively tested for engine durability, fuel-system compatibility, corrosion resistance, emissions and overall performance before being certified for sale

(c): The scientific studies, field validation and extensive real-world operating experience have shown that E20 is a safe, cleaner and technologically superior fuel when used in accordance with the prescribed specifications and manufacturer recommendations. The Government's assessment is

based not only on laboratory research but also on large-scale experience after nationwide implementation.

E15+ blended petrol has been in widespread use for over three-and-a-half years and E19-E20 fuel for over two-and-a-half years. More than 20 crore two-wheelers and over 3 crore petrol cars have been operating on these blends without any verified evidence of widespread engine failure or vehicle breakdown attributable to ethanol blending. Manufacturer service data also confirm that there is no abnormal corrosion, wear or reduction in vehicle life due to specification-compliant E20 fuel, and manufacturers continue to honour warranty obligations for such vehicles.

With regard to mileage, studies by Government agencies and automobile manufacturers indicate that fuel efficiency is influenced by several factors, including driving conditions, driving habits and vehicle maintenance. Any reduction in fuel economy in certain E10-designed vehicles is generally limited to about 3-5%, while E20 offers a higher-octane rating, superior anti-knock characteristics, cleaner combustion and smoother engine performance.

The transition to E20 has also delivered significant national benefits. The Ethanol Blended Petrol Programme has saved over ₹1.97 lakh crore in foreign exchange, substituted nearly 316 lakh metric tonnes of crude oil, reduced around 952 lakh metric tonnes of CO₂ emissions and transferred over ₹1.66 lakh crore to farmers.

(d): Studies conducted by the Government and expert agencies have established that ethanol blending has no adverse impact on vehicle efficiency or longevity when used in accordance with prescribed standards.

Extensive laboratory testing and field validation by the Inter-Ministerial Committee under NITI Aayog, IOCL, ARAI, IIP and SIAM confirmed that E20 fuel does not cause abnormal wear and tear or compatibility issues.

According to SIAM and ARAI, E20 improves acceleration and ride quality while reducing carbon emissions.

Ethanol's higher-octane number supports modern high-compression engines and its higher heat of vaporisation improves combustion efficiency.

Vehicle fuel economy depends on several factors, including driving habits, vehicle maintenance, tyre pressure, wheel alignment and air-conditioning load; any reduction in fuel economy in certain E10-designed vehicles is generally marginal (around 3–5%).

These findings are further validated through large-scale real-world experience.

One of the country's largest passenger vehicle manufacturers serviced 2.84 crore vehicles during FY 2025–26, including approximately 1.5 crore older, non-E20-certified vehicles, without reporting any E20-related engine damage or abnormal component wear. Similarly, one of the leading two-wheeler manufacturers has reported, based on extensive service records, no higher incidence of damage in vehicles operating on E20 compared with earlier fuel blends.

Automobile manufacturers, component suppliers, SIAM, ARAI, testing agencies and Oil Marketing Companies were associated with every stage of the scientific evaluation and phased rollout of E20. E20-compatible vehicles were introduced only after successful validation of material compatibility, fuel systems, engine durability, drivability and emissions. Manufacturers

continue to honour warranty obligations for vehicles using specification-compliant E20 fuel, providing further confidence in its safety and reliability.

(e) & (f): At present, no decision has been taken by the Government to increase ethanol blending in petrol beyond 20% or to introduce ethanol blending in diesel for commercial use. Any future decision, if considered, will be based on comprehensive scientific evaluation, vehicle compatibility studies, stakeholder consultations and the availability of adequate domestic production capacity.
