Ethanol Blending in India

Policy Evolution, Key Milestones and Frequently Raised Concerns

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Overview of the Ethanol Blended Petrol (EBP) Programme

Ethanol Blended Petrol (EBP) Programme has emerged as a key pillar of India's energy transition and biofuel strategy. It aims to improve energy security, support farmers, and reduce environmental impacts. The programme also promotes greater use of domestically produced renewable fuel.

Under the EBP Programme, ethanol blending has increased from less than 1.5 percent in 2013-14 to **20 percent** in 2025-26. India achieved the 20 percent blending target five years ahead of schedule. Ethanol procurement rose from about 38 crore litres in Ethanol Supply Year (ESY) 2013-14 to over **1,200 crore litres** (projected) in 2025-26. Production capacity expanded nearly fivefold from 421 crore litres in 2014 to about **2,000 crore litres** in 2026. This expansion has reduced crude oil imports and saved valuable foreign exchange. It has also lowered greenhouse gas emissions and strengthened farmers' incomes through new market opportunities.

Strengthening Energy Security through Ethanol Blending

India imports close to 88.5 percent of the crude oil it consumes. That single number explains a great deal about why ethanol blending sits so high on the policy agenda. Every barrel of oil bought from abroad exposes the country to price swings and supply shocks that are entirely outside its control. Ethanol produced from Indian sugarcane, maize and rice offers a way to blunt that exposure using resources grown at home.

Since the ESY 2014-15 (up to May 2026), the programme has delivered results that go well beyond a policy target on paper.

₹1.90+ lakh crore Saved in foreign exchange since 2014-15	**310+ lakh MT*** Crude oil substituted	**~930 lakh MT*** CO_2 emissions cut	**₹1.60+ lakh crore** Additional farmer earnings

**MT – Metric Tonnes*

Setting the Record Straight

Here is what the evidence actually shows on the key concerns surrounding ethanol blending, along with the more colourful myths that have circulated on social media.

The Claim	The Record
E20 cuts mileage by 30 percent.	The 30 percent figure refers only to ethanol's lower calorific value compared to petrol, not to a drop-in real-world mileage. Mileage depends on driving habits, tyre pressure, servicing and AC load far more than fuel type.
E20 damages engines, especially older ones.	No widespread pattern of engine failure linked to E20 has been reported since rollout. E20 was cleared only after extensive testing by SIAM, ARAI and IOCL together with vehicle makers.
Ethanol is not a high-performance fuel and reduces vehicle performance.	Ethanol is a high-octane fuel, with a research octane number of about 108.5, compared to 84.4 for petrol. E20 raises the effective octane rating of Indian petrol to around 95, improving combustion in modern engines. Vehicles calibrated for E20 can deliver better acceleration, smoother performance, and lower emissions.
Insurance companies refuse claims for E20 related damage.	Insurers and OEMs have clarified: E20 has NO impact on insurance or warranty validity in India. SIAM has categorically confirmed warranties will be honoured for vehicles running spec-compliant E20.

The Claim	The Record
Ethanol blended fuel should be cheaper, and government is pocketing the difference.	The NITI Aayog report cited for this claim is from 2020-21, when ethanol was indeed cheaper than petrol. Ethanol procurement costs have since risen above refined petrol costs, yet the mandate continues because of the energy security, environmental and farm income gains it delivers.
The Government told the Supreme Court that E20 is just an 'experiment'.	The case was about ethanol procurement contracts -not E20's merits. The Attorney General's office clarified on 30.06.2026 that the 'experiment' claim is incorrect.
Sugarcane juice is literally poured into petrol.	Viral videos showing raw juice mixed with petrol are misleading. Ethanol is produced through fermentation and industrial processing that changes its properties entirely, and it must meet strict fuel quality specifications before blending.
1 litre of ethanol consumes 10,000 litres of water.	An ethanol plant uses only 3-5 litres of processed water per litre of ethanol. Modern distilleries run Zero Liquid Discharge systems. Attributing the entire agricultural water footprint of paddy cultivation to ethanol production is incorrect. Only surplus rice, as determined and permitted by the DFPD after meeting national food security requirements, is diverted for ethanol production.
Ants and bees swarm fuel caps because E20 contains sugar.	Fuel ethanol is distilled - residual sugars are eliminated. It contains insect-repellent denaturants, petrol's odour dominates, and E20 forms less vapour than regular petrol.
Ethanol's water absorbing nature will spoil fuel and ruin tanks.	Keeping water out of any fuel tank, ethanol blended or not, is basic vehicle design. Modern vehicles are equipped with design features and safeguards to prevent water entry into fuel tanks.

Industry Voices of Confidence

Confidence in E20 is reinforced by leading automobile manufacturers and energy sector experts, drawing on extensive testing and real-world service data.

Some of the key observations from industry leaders are as follows:

- **Vikram Gulati, Country Head and Executive Vice President, Toyota Kirloskar Motor:** Vehicles undergo rigorous, independent certification worldwide. Ethanol is a proven, high-performance fuel, in use since the early 1900s. Decision to move to E20 was taken only after rigorous testing on older vehicles
- **Rahul Bharti, Senior Executive Officer, Corporate Affairs, Maruti Suzuki:** E10-designed vehicles have been tested extensively with E20 fuel. Across 2.84 crore vehicles serviced by Maruti Suzuki in FY 2025-26, more than 1.5 crore were over three years old and hence not E20-certified. Still no E20-related damage was found. On mileage, the real impact is small. For a car giving 20 km per litre, the drop is roughly 0.6 km. Driving habits and maintenance affect mileage far more than fuel type. Better acceleration and lower pollution offset this small difference.
- **Ashutosh Varma, Chief Business Officer, Hero MotoCorp:** Analysis of extensive service data found no incidence of higher damage in vehicles running on E20 compared to earlier fuels.
- **Vartika Shukla, Former Chairman and Managing Director, Engineers India Limited:** The ethanol blending programme was developed through extensive consultation with all stakeholders. It is supported by scientific evidence, rigorous automotive testing, and global best practices. E20 fuel meets BIS standards and BS-VI emission norms. It is available uniformly across retail outlets nationwide.

Across manufacturing and energy sectors, the message from industry leaders is consistent. E20 is safe, well-tested, and backed by real-world data.

Ethanol Blending Is a Globally Proven Fuel Strategy

India is far from alone in adopting ethanol blending. It is now a globally accepted practice. Several major economies have built ethanol firmly into their fuel strategy.

- **United States:** E10 is the standard ethanol blended fuel nationwide. E15 is expanding rapidly, backed by the US government. Millions of vehicles are already flex fuel capable. These can run on blends as high as E85.
- **Brazil:** Brazil remains the global leader in ethanol use. It currently mandates E27 as its standard petrol blend. This is being raised further to around 35 percent. Over 80 percent of new cars sold are flex fuel vehicles. These run on E27, E30, or pure hydrous ethanol.

- **Japan:** Japan has brought ethanol into its fuel mix too. This was done through a phased E10 rollout.

Countries including Canada, Thailand, and several European nations have also adopted ethanol blending as part of their clean fuel strategies.

Powering India's Energy Future

The Ethanol Blended Petrol (EBP) Programme has evolved into a key pillar of India's energy strategy. Its progress reflects scientific evaluation, phased implementation, and collaboration across government, industry, and research institutions. The programme has strengthened energy security, reduced emissions, and created new income opportunities for farmers. It has also reduced crude oil imports and promoted the use of domestically produced renewable fuel. The EBP Programme will continue contributing to a cleaner, more resilient, and self-reliant transport fuel ecosystem.

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