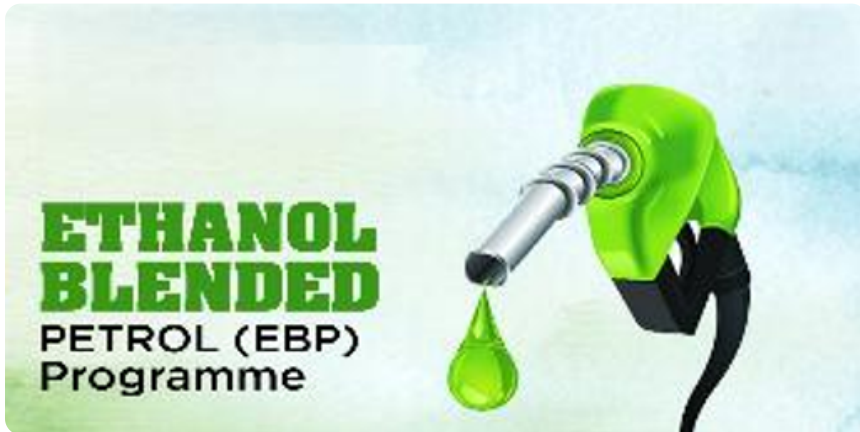




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Government Reaffirms that Ethanol Blending Programme in Petrol is Scientifically Validated

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The Government of India has reiterated that the Ethanol Blending Programme (EBP) for petrol is scientifically validated and is being continuously monitored in consultation with Oil Marketing Companies (OMCs), automobile manufacturers, fuel-testing agencies, and other stakeholders. The clarification came in response to misleading and unsubstantiated claims on social media regarding Ethanol Blended Petrol (EBP), especially concerns about engine failures and vehicle breakdowns linked to E20 fuel. The government stated that no widespread cases of engine failure attributable to ethanol blending have been reported since the introduction of E20 petrol.?

The Centre also clarified that the ethanol used for blending in petrol is anhydrous ethanol, which is highly purified and free from sugar residues. Therefore, viral claims such as “E20 petrol attracts ants because it contains sugarcane juice or sugar residues” are scientifically incorrect. The government emphasised that the Ethanol Blending Programme remains an important part of India’s strategy to reduce crude oil imports, improve energy security, support farmers, and lower vehicular emissions.

Why is it Important?

It is an important development related to India’s energy transition and biofuel policy.

It reinforces the government’s push for cleaner transport fuels and reduced dependence on imported crude oil.

What is Ethanol Blended Petrol (EBP)?

Ethanol Blended Petrol (EBP) refers to petrol mixed with a certain percentage of ethanol, a biofuel produced mainly from sugarcane, molasses, maize, damaged food grains and other biomass feedstocks. In India, E20 means 20% ethanol and 80% petrol.

Ethanol is a renewable fuel and is used as a blending component because it can:

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reduce dependence on fossil fuels

improve octane value of petrol

lower carbon emissions

create an alternative market for agricultural produce.

Government's Clarification on E20 Fuel

The government stated that the Ethanol Blending Programme is based on scientific studies, technical standards, and stakeholder consultations.

It noted that:

E20 petrol has been introduced nationwide in a phased manner.

Its implementation is being monitored with the help of OMCs, auto companies, and testing agencies.

No evidence has emerged to show systemic engine damage caused by E20 fuel.

Viral social media claims, including those involving ants, sugar residue, or “sugarcane juice being mixed into petrol”, are misleading and not based on fuel science.

Ethanol Blending Programme (EBP) in India

The Ethanol Blended Petrol Programme was launched by the Government of India to blend ethanol with petrol in order to reduce import dependence and promote cleaner fuel.

Main Objectives

Reduce crude oil import bill

Improve energy security

Cut carbon emissions and vehicular pollution

Provide better returns to farmers

Promote domestic biofuel production

Support the sugar and grain economy

India has rapidly increased ethanol blending in petrol and achieved 20% blending ahead of the original target year, making it one of the fastest-growing ethanol blending programmes globally.

Additional Key Facts

Ethanol

Ethanol is an alcohol-based biofuel.

Chemical formula: C_2H_5OH

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It is produced through fermentation of sugars and starches from biomass.

In fuel use, ethanol is denatured and dehydrated before blending.

Common Feedstocks for Ethanol in India

Sugarcane juice

B-heavy molasses

C-heavy molasses

Damaged food grains

Maize

Surplus rice from FCI stocks (as permitted by policy)

National Policy on Biofuels

First introduced: 2018

Amended: 2022

Nodal Ministry: Ministry of Petroleum and Natural Gas

It promotes:

1G biofuels (from food crops like sugarcane, maize)

2G biofuels (from agricultural residue, lignocellulosic biomass)

advanced biofuels

Categories of Biofuels

First Generation (1G) Biofuels – made from food crops such as sugarcane, corn, grains.

Second Generation (2G) Biofuels – made from agricultural residues, crop waste, non-food biomass.

Third Generation (3G) Biofuels – derived from algae and other advanced sources.

E20 Fuel in India

E20 = 20% ethanol + 80% petrol

India has moved from E10 to E20 in recent years.

The transition is part of India's broader clean-fuel roadmap.

The government is also examining higher ethanol blends such as E25, E85 and E100 for future use, subject to standards and vehicle compatibility.

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Ethanol and Energy Security

Ethanol blending helps India by:

lowering dependence on imported crude oil,
diversifying the fuel basket,
supporting domestic agricultural and agro-processing sectors,
reducing foreign exchange outgo on petroleum imports.

This is particularly important because India imports a large share of its crude oil requirements.

Global Context: Brazil and Ethanol

Brazil is one of the world's leading examples of ethanol fuel use. It has a long history of sugarcane-based ethanol and flex-fuel vehicles capable of running on higher ethanol blends. India's ethanol strategy is often compared with Brazil's model, especially in discussions on higher blends such as E25 and E85.

Concerns and Policy Challenges

Although the government has defended E20 scientifically, ethanol blending also raises policy and implementation questions that are important for UPSC analysis:

Vehicle compatibility, especially for older vehicles not originally designed for higher ethanol blends

Mileage and fuel efficiency concerns, since ethanol has lower energy density than petrol

Feedstock availability, especially during years of weak sugarcane output

Water stress, because sugarcane is a water-intensive crop

Food vs fuel debate, if food grains are increasingly diverted to ethanol production

Supply-side stress on sugar markets, especially when more sugarcane is diverted to ethanol production rather than sugar.

Exam Focus Points (Quick Revision Notes)

Scheme in News ? Ethanol Blended Petrol (EBP) Programme

Government Clarification ? Ethanol blending scheme for petrol is scientifically validated

Current Blend in Focus ? E20 petrol

Meaning of E20 ? 20% ethanol + 80% petrol

Nodal Ministry ? Ministry of Petroleum and Natural Gas

Main Objective ? Reduce crude oil imports, improve energy security, lower emissions

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Feedstocks for Ethanol ? Sugarcane juice, molasses, maize, damaged food grains

Policy Linked ? National Policy on Biofuels, 2018 (amended 2022)

Global Example ? Brazil

Major Concern Debunked ? No evidence that E20 causes widespread engine failures or attracts ants due to sugar residue