

Ethanol Blending: Significance & Road Ahead: RSTV - Big Picture

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Introduction:

India is one of the fastest-growing economies in the world. The development objectives focus on economic growth, equity and human well-being. Energy is a critical input for socio-economic development. The energy strategy of a country aims at efficiency and security and to provide access that is environmentally friendly and the achievement of an optimum mix of primary resources for energy generation. Fossil fuels will continue to play a dominant role in the energy scenario in our country in the next few decades. However, conventional or fossil fuel resources are limited, non-renewable, polluting and, therefore, need to be used prudently. On the other hand, renewable energy resources are indigenous, non-polluting and virtually inexhaustible. India is endowed with abundant renewable energy resources. Therefore, their use should be encouraged in every possible way.

What is ethanol blending?

- Biofuels are liquid or gaseous fuels produced from biomass resources and used in place of or in addition to diesel, petrol or gasoline.
- Ethanol is a biofuel that is produced by processing organic matter via fermentation. The **mixing of ethanol with petrol/gasoline** is called ethanol blending.

National Biofuels Policy

Salient Features:

1. The Policy categorizes biofuels as:
 - a. Basic Biofuels – First Generation (1G) bioethanol & biodiesel
 - b. Advanced Biofuels – Second Generation (2G) ethanol, Municipal Solid Waste (MSW) to drop-in fuels
 - c. Third Generation (3G) biofuels, bio-CNG etc.
2. Crops to be used:
 - a. Use of Sugarcane, Sugar Beet and Sweet Sorghum.
 - b. Starch containing materials like Corn, Cassava, Damaged food grains like wheat, broken rice, Rotten Potatoes which are unfit for human consumption.
3. Financial incentives to provide a thrust to the sector:
 - a. Viability gap funding for 2G ethanol bio refineries of Rs.5000 crore in 6 years
 - b. Additional tax incentives, higher purchase price as compared to 1G biofuels.

4. The Policy encourages the setting up of supply chain mechanisms for biodiesel production from non-edible oilseeds, Used Cooking Oil.

Initiatives:

- Roadmap for Ethanol Blending In India 2020-25 by the NITI Aayog.
- Launch of the Ethanol Blended Petrol Programme in 2003 for sale of 5% ethanol blended petrol in nine States and four UTs.
- RUCO initiative of [FSSAI](#): collection and conversion of used cooking oil to bio-diesel.

National target: 20% ethanol blending target by five years to 2025.

Advantages:

- Promotion of energy security and reduced dependence on the volatile Middle-East.
- Reduced import dependence: Bridging the current account deficit due to the inelastic nature of crude oil imports.
- The impetus to clean energy which in turn helps in fulfilling our [Paris agreement](#) commitments. 1 crore litre of 10% ethanol blended petrol reduces 20000 tons of CO₂ emission.
- It may lead to improved employment opportunities for people and an alternate income for farmers in the face of a non-remunerative agricultural profession. One 100 KLPD 2G biorefinery can contribute 1200 jobs in Plant Operations.
- It leads to efficient waste management of the 62 million tonnes of annual waste produced in India by diverting it to ethanol production.
- Health benefits: Prolonged reuse of Cooking Oil for preparing food, particularly in deep-frying is a potential health hazard and can lead to many diseases. Used Cooking Oil is a potential feedstock for biodiesel and its use for making biodiesel will prevent the diversion of used cooking oil in the food industry.
- It augurs well with the ongoing initiatives of the Government such as [Make in India](#), Swachh Bharat Abhiyan, Skill Development and offers a great opportunity to integrate with the ambitious targets of doubling Farmers' Income, Import Reduction, Employment Generation, Waste to Wealth Creation.

Challenges:

- Creation of artificial scarcity if food grains and tubers are diverted to ethanol production, thereby leading to food inflation.
- Diversion of agricultural land for cultivation of biodiesel crops.
- Modification of vehicles and the introduction of E-20 compatible components may prove to be a hurdle.
- Skewed distribution of ethanol production areas in the country.
- Deficit of ethanol storage infrastructure like storage tanks, nozzle calibration issues, etc.

Way forward: (Recommendations of NITI Aayog)

- Augmentation of the ethanol production capacity and encouraging the use of water-saving crops like maize to produce ethanol.
- Focus on 2G advanced biofuels to prevent any trade-off with food security.
- A nationwide awareness campaign should be launched to educate citizens about the benefits of ethanol blending.
- Expediting ethanol production clearances which currently falls in the Red category and facilitating ethanol transport across the country which is currently regulated by the Industries (Development and Regulation) Act, 1951.
- Incentivize production of ethanol-blended compatible vehicles.

