

# Use of Bio-Ethanol Fuel in INDIA

Mohit Garg<sup>1</sup>, Jasgurpreet Singh<sup>2</sup>

<sup>1,2</sup>Department of Mechanical Engineering , Chandigarh University, Ghruan, Mohali, INDIA.

*This paper presents a general review of conversion of Biomass to Bio-Ethanol Fuel from the economical & technical point of view, & also about brief of Bio-ethanol production. In 2014, Brazil produced 23.4 billion litres, representing 25.2 percent of the world's total ethanol used as a fuel. Bio-ethanol fuel produced from biomass such as sugar containing materials, like sugar cane, sugar beet, sweet sorghum, etc; Starch containing materials such as corn, cassava, algae etc & cellulosic material such as wood waste, agricultural and forestry residues. India has great resources of energy to produce/grown crops include corn, wheat and maize plants & these crops help to produce Bio-Ethanol Fuel. However, Indian produced bio-ethanol fuel successfully helps in reduction of harmful pollutants, increasing revenue, farmer's growth etc.*

## Abstract

Bio-Ethanol fuels are the bio-fuels which are derived from renewable bio-mass resources. Bio-mass resources are the bio-degradable fraction of products, wastes and residues from agriculture, forestry and related industries as well as the biodegradable fraction of industrial and municipal wastes. Bio-ethanol can be produced from bio-mass by the hydrolysis and sugar fermentation processes. The common blend of ethanol is E10 (10% Ethanol, 90% Gasoline) which is used for the flexible fuel vehicles. Ethanol has also been used along with diesel, but comparatively ethanol blended petrol is more acceptable than with diesel because it makes the fuel stable. Bio-ethanol decreases the mileage of the vehicle by 25-30%, consequently but it reduces the pollution level. Moreover, bio-ethanol fuels are lesser costs comparatively to gasoline and diesel. Now India approaches to the biofuel for saving money, make in India project etc.

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## 1. Introduction

Increasing petrol and diesel prices & the demand of these fuels devastatingly affects the Indian fuel policy, now our government going to change the path in the field of bio-fuels. Currently, india needs around 2900 cr litres of petrol, and 9000 cr litres of diesel per year, India is the 6<sup>th</sup> largest consumer in the world & will double consumption and become 3<sup>rd</sup> largest consumer by 2030. Our import bill on account of crude stands at almost 6 lac crores. India is the third highest energy related carbon dioxide emitter country in the world.

## 2. BIOFUEL POLICY OF INDIA: GENESIS OF ETHANOL BLENDING IN INDIA

In 1977, six technical committees and four study groups were set up to examine the issue of blending of ethanol in petrol .However, the findings of all the studies came into limelight only in the year 2000, when the Ministry of Petroleum and Natural Gas took up the pilot project in three locations of Maharashtra and Uttar Pradesh to study the blending potential of ethanol in petrol and in diesel. These projects were implemented during the year 2001 at Miraj and Manmad in Maharashtra and Bareilly in Uttar Pradesh. Under these projects, ethanol blended petrol was sold through 300 retail outlets. During the year 2002, six more such projects were commissioned in Andhra Pradesh, Punjab and Uttar Pradesh. Simultaneously, Research and Development studies were also carried out on the effect of ethanol blended petrol on automobiles. After successful trials of pilot projects and the recommendations of Research and Development studies, Government of India proposed to implement this

program to sell petroleum fuel blended with 5 % ethanol from January 2003 in nine states and four union territories. The combined demand was estimated to be 363 million litre/ year, whereas the oil companies could only purchase 196 million litre of ethanol. Difficulties in ethanol procurement were reported in the states of Maharashtra, Goa, Gujarat, Andhra Pradesh and Karnataka. The required demand of ethanol for blending with petrol could not be achieved due to several factors, which are highlighted in this paper.

## **2. Benefits of Bio-Ethanol:**

Bioethanol has a number of advantages over conventional fuels. It comes from a renewable resource i.e. crops and not from a finite resource and the crops it derives from can grow well in the UK (like cereals, sugar beet and maize). Another benefit over fossil fuels is the greenhouse gas emissions. The road transport network accounts for 22% ([www.foodfen.org.uk](http://www.foodfen.org.uk)) of all greenhouse gas emissions and through the use of bioethanol, some of these emissions will be reduced as the fuel crops absorb the CO<sub>2</sub> they emit through growing. Also, blending bioethanol with petrol will help extend the life of the UK's diminishing oil supplies and ensure greater fuel security, avoiding heavy reliance on oil producing nations. By encouraging bioethanol's use, the rural economy would also receive a boost from growing the necessary crops. Bioethanol is also biodegradable and far less toxic than fossil fuels. In addition, by using bioethanol in older engines can help reduce the amount of carbon monoxide produced by the vehicle thus improving air quality. Another advantage of bioethanol is the ease with which it can be easily integrated into the existing road transport fuel system. In quantities up to 5%, bioethanol can be blended with conventional fuel without the need of engine modifications. Bioethanol is produced using familiar methods, such as fermentation, and it can be distributed using the same petrol forecourts and transportation systems as before.

### Refernces:

[https://www.researchgate.net/publication/263047461 Ethanol Blended Fuel in India An Overview](https://www.researchgate.net/publication/263047461_Ethanol_Blended_Fuel_in_India_An_Overview)

Wikipedia