

The Biofuel Breakthrough - An Exploration Into The Ethanol Blended Petrol Program And Its Global Implications For Sustainable Energy

written by King Stubb & Kasiva | November 21, 2023



Introduction:

India's burgeoning energy demand, fuelled by economic growth, population expansion, and urbanization, has led to a heavy reliance on imported fossil fuels, particularly oil. Recognizing the economic and environmental challenges posed by this dependence, the Indian government has embarked on a journey toward energy security and sustainability. At the forefront of this initiative is the Ethanol Blended Petrol (EBP) Program, a pivotal step in reducing reliance on conventional petroleum and promoting biofuels.

Table of Contents

- [Introduction:](#)
- [Policy Dynamics: From 5 to 20 % Ethanol Concentration](#)
- [Amending Biofuel Policies through Government Initiatives Since 2014](#)

- [Procurement Triumphs, Ongoing Challenges and Meeting Demand](#)
- [A Blueprint for Ethanol Blending Goals Through Initiatives](#)
- [Ethanol Production Capacity: Balancing Demand and Challenges](#)
 - [Government-Oil Company Collaborations](#)
 - [Automotive Sector's Role](#)
- [Global Lessons: Ethanol Blending Practices Across the World](#)
- [Conclusion:](#)
- [FAQs:](#)
 - [What is the current status of ethanol blending in India under the EBP Program?](#)
 - [How is the Indian government addressing challenges in ethanol production and procurement?](#)
 - [What role does the auto sector play in the adoption of ethanol-blended petrol, and are there any modifications required in existing engines?](#)

Policy Dynamics: From 5 to 20 % Ethanol Concentration

Introduced in 2003, the EBP Program commenced by combining 5% ethanol with 95% petrol.[\[1\]](#) Over time, there has been a gradual escalation in the ethanol concentration, and it presently stands at 1%.[\[2\]](#) The National Policy on [Biofuels](#)-2018 set an ambitious target of achieving 20% ethanol blending in petrol by 2030. A significant amendment accelerated this target to the Ethanol Supply Year (ESY) 2025-26, five years ahead of schedule. As of ESY 2021-22, Oil Marketing Companies (OMCs) have already achieved an impressive 10.16% blending.

Amending Biofuel Policies through Government Initiatives Since 2014

The government's commitment is evident in the amendment to the National Policy on Biofuels – 2018, pushing the ethanol blending target to the ESY 2025-26.[\[3\]](#) This move underscores the determination to enhance energy security, reduce import dependency, and address environmental concerns. The extension of the EBP Program nationwide, except for the Andaman and Nicobar Islands, further emphasizes this commitment.

Further, to strengthen domestic [ethanol](#) production, the Indian government has implemented various interventions since 2014. These include fair pricing mechanisms, opening alternate routes for ethanol production, amendments to regulatory acts, and reductions in Goods and Service Tax (GST) on ethanol used for the EBP Program.[\[4\]](#) The comprehensive approach also involves differential pricing models, nationwide coverage, interest subvention schemes, and a long-term policy on ethanol procurement.

Procurement Triumphs, Ongoing Challenges and Meeting Demand

In the ethanol supply year 2018-19, the government expanded the range of raw materials permitted for ethanol production. Beyond C heavy molasses, B heavy molasses, sugarcane juice/sugar/sugar syrup, and surplus rice with Food Corporation of India (FCI) were allowed.[\[5\]](#) Different ex-mill prices were established based on the raw material used, promoting flexibility in ethanol production.

The government's initiatives resulted in a substantial increase in ethanol procurement by Public Sector Undertaking (PSU) OMCs. From 38 crore litres in ESY 2013-14, procurement surged to 188.6 crore litres in 2018-19, achieving an average blend %age of 5.00%[\[6\]](#) However, challenges persist.

A Blueprint for Ethanol Blending Goals Through Initiatives

Despite progress, challenges such as low sugarcane crop production and delays in new distillery startups have impacted ongoing ESY 2019-20 supplies. To address ethanol distillation capacity constraints, the Department of Food and Public Distribution initiated a scheme in July 2018 to provide financial assistance to sugar mills.[\[7\]](#)

And to achieve blending targets, the Ministry of Petroleum and Natural Gas issued a 'Long Term Ethanol Procurement Policy' in 2019, providing a structured framework for procurement. This policy aligns with the goal of 10% [\[A1\]](#) ethanol blending in petrol by 2021-22 and 20% by 2030.[\[8\]](#)

Ethanol Production Capacity: Balancing Demand and Challenges

With a total annual production capacity of 10.37 billion litres in 2022, India seems well-equipped to meet demand. However, challenges arise as a significant portion is directed toward liquor production. To address this, oil CPSEs are setting up second-generation ethanol bio-refineries,[\[9\]](#) aiming to meet the demand of 6.98 and 10.16 billion litres for 2023-24 and 2024-25, respectively.

Government-Oil Company Collaborations

- Government initiatives, including the Ethanol Interest Subvention Scheme, aim to encourage sugar mills and distilleries to produce ethanol. Oil CPSEs are setting up bio-refineries in various states.[\[10\]](#) Plans to set up 130-135 new distilleries underscore the collaborative efforts between the government and oil companies.

Automotive Sector's Role

- For 10% ethanol blending, existing engines need no modification. However, achieving 20% blending requires flex-fuel engines, an area where automakers like Toyota are actively engaged. The global adoption of ethanol, especially in countries like Brazil and the US, provides valuable insights into India's journey.[\[11\]](#)

Global Lessons: Ethanol Blending Practices Across the World

The global transportation sector is grappling with three significant challenges: the depletion of fossil fuels, volatility in crude oil prices, and the imposition of stringent environmental regulations. Addressing these issues requires the adoption of alternative fuels tailored to specific geographic contexts. Ethanol, recognized for its superior fuel quality with a higher octane number and environmental benefits, emerges as a fitting alternative for blending in transportation fuels.

As of 2019, global fuel ethanol production reached 110 billion litres, reflecting an average annual growth of 4% over the past decade. Notably, the United States and Brazil jointly contribute 84% of the global share, with a production of 92 billion litres. The European Union, China, India, Canada, and Thailand also play significant roles in ethanol production.[\[12\]](#)

To enhance the availability of ethanol for transportation, various countries have implemented initiatives. Brazil, for instance, has legislated ethanol blending in gasoline within the range of 18-27.5%, currently standing at 27%. The use of 100% hydrous ethanol by flex-fuel vehicles in Brazil has resulted in an average ethanol share of 46% in transportation. Similarly, the United States operates under the Renewable Fuel Standards (RFS) program, which mandates annual volume requirements based on fuel availability.

A comparative analysis of ethanol prices across countries reveals variations. In the context of India, ethanol prices are relatively higher due to fixed government-set costs for raw materials like sugarcane and food grains, aimed at supporting the farming community.

The collaborations between the Society of Indian Automobile Manufacturers and the US Grains Council highlight the importance of international cooperation in advancing ethanol usage. Lessons from countries like Brazil, where up to 85% ethanol blend is accepted, offer valuable insights for India's future biofuel landscape.[\[13\]](#)

Conclusion:

India's pursuit of ethanol-blended petrol is pivotal in reducing oil import dependence and embracing sustainable fuels. While challenges exist, the

government's multifaceted approach, coupled with industry collaborations, positions India for a transformative role in the global biofuel arena. As the nation accelerates towards its blending targets, the vision of a more sustainable and secure energy future becomes increasingly tangible as India's commitment to promoting ethanol-blended petrol extends beyond reducing dependence on imported fossil fuels. It is a holistic approach fostering economic growth, job creation, and environmental protection. The combination of financial incentives, policy frameworks, and production strategies positions India as a potential leader in the global biofuel landscape.

FAQs:

What is the current status of ethanol blending in India under the EBP Program?

As of the ongoing Ethanol Supply Year (ESY) 2021-22, Oil Marketing Companies (OMCs) have achieved a remarkable 10.16 % blending as of July 10, 2022. The government aims to reach 20 % ethanol blending in petrol by the accelerated timeline of ESY 2025-26.

How is the Indian government addressing challenges in ethanol production and procurement?

The government has implemented various initiatives, including fair pricing mechanisms, diversification of raw materials, reductions in Goods and Service Tax (GST) on ethanol, and interest subvention schemes. These measures aim to boost domestic ethanol production, overcome distillation capacity constraints, and facilitate a smooth procurement process.

What role does the auto sector play in the adoption of ethanol-blended petrol, and are there any modifications required in existing engines?

For 10% ethanol blending, existing engines require no modifications. However, achieving 20% blending necessitates flex-fuel engines. Automakers, including Toyota, are actively working on developing such engines for the Indian market. The global adoption of ethanol, particularly in countries like Brazil and the US, provides valuable insights for India's auto sector transition.

[\[1\]](#) GSR 412(E) dated 19.05.2015

[\[2\]](#) GSR 881(E) dated 26.11.2019

[\[3\]](#) Gazette Notification Dated 4th June 2018

[\[4\]](#) Notification No. 11/2017-Central Excise, dated the 30th June, 2017.

[\[5\]](#) Ministry of Petroleum & Natural Gas Office Memorandum Dated 13th January 2021 Accessed From <http://mopng.gov.in/files/article/articlefiles/OM-on-NBCC-decision-13012021.pdf>

[6] <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1873022>

[7] <https://dfpd.gov.in/writereaddata/Portal/Magazine/1.pdf>

[8] https://mopng.gov.in/files/uploads/Final_Ethanol_Procurement_Policy.pdf

[9] <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1974133>

[10] <https://pib.gov.in/PressReleasePage.aspx?PRID=1885392>

[11] <https://pib.gov.in/PressReleasePage.aspx?PRID=1869250>

[12]

https://www.niti.gov.in/sites/default/files/2021-06/EthanolBlendingInIndia_compressed.pdf

[13]

<https://www.thehindubusinessline.com/opinion/biofuel-what-india-can-learn-from-brazil/article34142952.ece>

[A1] Same as above

[King Stubb & Kasiva,](#)
Advocates & Attorneys

[Click Here to Get in Touch](#)

[New](#)

[Delhi](#) | [Mumbai](#) | [Bangalore](#) | [Chennai](#) | [Hyderabad](#) | [Mangalore](#) | [Pune](#) | [Kochi](#)

Tel: [+91 11 41032969](tel:+911141032969) | Email: info@ksandk.com