

The focus of Environmental Information, Awareness, Capacity Building & Livelihood Programme (EIACP) scheme is to disseminate environmental information to decision makers, policy planners, scientists and researchers across the world.

CERC-EIACP, Programme Centre - Resource Partner to MoEF&CC works on the thematic mandate of 'Environment Literacy - Eco-labelling & Eco-friendly Products'. This bi-monthly e-bulletin features latest of Environment, developments and innovations.

## Global Bio-fuel Alliance (GBA)

Indian Prime Minister Shri Narendra Modi launched the Global Bio-fuel Alliance, along with the leaders from Singapore, Bangladesh, Italy, USA, Argentina, Mauritius, and UAE, on the sidelines of G20 Summit in New Delhi on 9<sup>th</sup> September, 2023. The alliance intends to accelerate the usage of biofuel through technological advancements, intensifying usage of sustainable biofuels, shaping robust standard setting and certification through the participation of a wide spectrum of stakeholders. The alliance will also act as a central repository of knowledge and an expert hub. GBA aims to act as a catalytic platform fostering global collaboration for the advancement and widespread adoption of biofuels which would be a key step in decarbonizing transportation.

Source: [https://www.mea.gov.in/press-releases.htm?dtl/37092/Launch\\_of\\_the\\_Global\\_Biofuel\\_Alliance\\_GBA](https://www.mea.gov.in/press-releases.htm?dtl/37092/Launch_of_the_Global_Biofuel_Alliance_GBA)

## Biofuels

## Green Issue

Any hydrocarbon fuel that is produced from an organic matter like Corn, Sugarcane, Soybean oil, Starch, Sewage, etc in a short period of time are called biofuels.

Biofuels have been recognized as a great feasible renewable solution to reducing fossil fuel reserves along with advantages like cost benefits, empowering farmers, and reducing carbon emissions. In addition to these benefits, Biofuels also reduces burden on government, as the import of fossil fuels from other countries decreases. According to National policy on Biofuels- 2018 Amendment, 2022, 20% blending of bioethanol in petrol by 2025-26 and 5% blending of biodiesel in diesel is proposed by 2030. In 2022, government of India saved more than 50,000 crores in forex outgo as 10% Ethanol blending was achieved.

Bio-hydrogen, Bio-ethanol, Bio-butanol, Bio-diesel, and Bio-gas are major types of biofuels.

### Bio-hydrogen:

Bio-Hydrogen is produced by microbial metabolism of biomass obtained from various sources. It is an effective energy source to reduce pressure on the environment. Earlier this year in January, the Indian government approved the National Green Hydrogen Mission (NGHM) with a budget of 19744 Crore INR to the production, utilization as well as export of the hydrogen.

Bio-hydrogen and Green hydrogen are obtained from two different sources which can be used as an alternative source of energy for various purposes. Green hydrogen is produced through an electrochemical process of water using electricity generated from renewable sources, such as solar or wind power. The choice between the two sources depends on factors like feedstock availability, energy requirements, and the specific goals of the hydrogen production project.

### Bio-ethanol:

Ethanol produced through fermentation of sugars and starch from the biomass by microorganisms, like yeast is called Bio-ethanol. Like bio-hydrogen, bio-ethanol is also an effective source of energy to reduce carbon emissions.

Bio-ethanol when blended with petrol can be used in flex-fuel vehicles as well as in traditional petrol based vehicles. Ethanol blended fuel reduces tailpipe emissions of carbon monoxide and other pollutants, which helps in reducing air pollution.

Bioethanol production processes and infrastructure are well-established and are comparatively easier.

### Bio-butanol:

Bio-butanol is a type of alcohol that is used as a biofuel. Ethanol cannot be preserved easily and it more difficult in process of allocation, storage, transition. On the other hand bio-butanol overcomes these disadvantages, making it a better option compared to ethanol. However, Bio-butanol production process, particularly fermentation is more challenging to control and optimize.

Bio-butanol also has higher energy content and higher burning efficiency, and can be used for longer distance. It can be used directly or blended with gasoline or diesel without any vehicle retrofit.

### Bio-diesel:

Bio-diesel is a type of biofuel made from renewable resources, mostly plant-based oils or animal fats, which are chemically processed to create a fuel suitable for diesel engines.

Bio-diesel can be produced from variety of feedstock like vegetable oils (for ex. soybean oil, canola oil, palm oil, and jatropha oil), animal fats, and even algae.

UCO (Used cooking oil) has been identified as a potential raw material for biodiesel production in National Policy on Biofuels-2018.

Bio-diesel can be blended with conventional diesel at different ratio.

### Bio-gas:

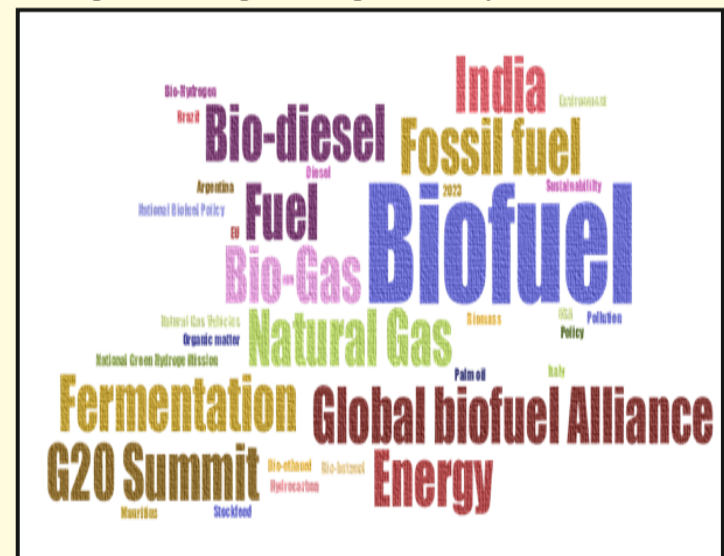
Bio-gas as the name suggest is a gaseous form of fuel or energy source which is produced by the anaerobic digestion of organic materials like cattle dung, agricultural waste, sewage sludge, food waste etc., by the microorganisms.

Biogas contains around 50-70% methane (CH<sub>4</sub>) and 30-50% carbon dioxide (CO<sub>2</sub>) typically along with small amount of other gases.

Biogas is widely used in electricity generation in farms and rural areas, heating applications, cooking as well as transportation using natural gas vehicles (NGVs).

### Sources:

[https://www.drishtias.com/to-the-points/paper3/biofuels-1/print\\_manually](https://www.drishtias.com/to-the-points/paper3/biofuels-1/print_manually)  
[https://www.sciencedirect.com/topics/engineering/biohydrogen#:~:text=Biohydrogen%20\(3003\)%20is%20a%20new,amd%20Sustainable%20Energy%20Reviews%2C%202021%20](https://www.sciencedirect.com/topics/engineering/biohydrogen#:~:text=Biohydrogen%20(3003)%20is%20a%20new,amd%20Sustainable%20Energy%20Reviews%2C%202021%20)  
<https://www.downtoearth.org.in/blog/energy/biohydrogen-s-role-in-india-s-green-hydrogen-pathway-92267>  
<https://www.siam.in/pressrelease-details.aspx?mpgid=48&pgidtrail=50&pid=541>  
<https://www.terin.org/policy-brief/accelerating-biodiesel-blending-india>  
<https://iea.blob.core.windows.net/assets/8d434960-a85c-4c02-ad96-77794aaa175d/GlobalHydrogenReview2023.pdf>  
<https://cdmbbsr.s3waas.gov.in/s3716e1b8c6cd17b771da77391355749f3/uploads/2023/05/2023053179.pdf>  
<https://pib.gov.in/PressReleaseSelfFramePage.aspx?PRID=1831289>  
<https://hdl.handle.net/2134/19310>  
<https://mopng.gov.in/en/refining/about-bio-fuel>  
<https://timesofindia.indiatimes.com/blogs/voices/how-india-can-rapidly-grow-its-biofuel-usage-as-an-alternative-fuel/>  
<https://mopng.gov.in/en/refining/ethanol-blended-petrol>



Link to participate: <https://www.mygov.in/task/design-logo-global-biofuel-alliance/>

## Eco-Tips

**Bio-fuel: Waste to Wealth Creation**  
**Bio-fuels the wisest choice & the best alternative for fossil fuels**

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