

## All about Biofuels

Biofuels are one way to promote sustainable mobility. But what exactly are they?

Produced from renewable, or biobased feedstock, biofuels can be blended into conventional fuels.

Various types of renewable feedstock can be used. For gasoline sector, the list includes sugar beets, corn and wheat.

Sugar from these crops is converted into Ethanol by fermentation. Isobutene is added to obtain ETBE<sup>\*</sup>. Both Ethanol and ETBE can be directly incorporated into gasoline.

*\*Ethyl Tert-Butyl Ether*

For Diesel sector, vegetable oils, waste oils and animal fats can be used.

They are esterified to obtain FAME<sup>\*\*</sup> or hydrotreated to obtain HVO<sup>\*\*\*</sup>.

*\*\*Fatty Acid Methyl Ester*

*\*\*\*Hydrotreated Vegetable Oils*

There are also gaseous biofuels. Biogas made, for example by fermenting organic animal or plant matter in a biodigester. The biogas is then upgraded and injected into gas networks. When biogas is used as vehicle fuel, it is referred to as renewable NGV<sup>\*\*\*\*</sup>.

*\*\*\*\*Natural Gas for Vehicle*

Because it costs more to manufacture biofuels than conventional fuels, regulations incentivize their use.

Objectives vary depending on the country — energy independence, support for agriculture, land use policy or tackling climate change.

Contrary to conventional fuels, the carbon dioxide emitted during biofuel combustion is offset by the carbon dioxide captured as part of the photosynthesis process in plants.

The percentage of biofuel incorporated varies depending on regulations and specifications in each country. The name specifies the percentage. For example, E10<sup>\*\*\*\*\*</sup> is gasoline with a maximum Ethanol volume of 10% and B7<sup>\*\*\*\*\*</sup> is diesel fuel with a maximum FAME volume of 7%.

*\*\*\*\*\*According to local specifications*