

# THE ADVANTAGES OF BIO-FUEL

As the term suggests, bio-fuels are fuels that are formed when biological matter decomposes. The bio-fuels are mostly derived from plants. Bio-fuels exist in all the three states of matter: solid, liquid, and gas.

Difference between bio-fuels and fossil fuels

Bio-fuels are different from fossil fuels in the following ways:

- Fossil fuels take a million years to build whereas bio-fuels can be made extremely fast, in a matter of days.
- Fossil fuels generate huge amounts of pollution. Bio-fuels are comparatively safer.
- Bio-fuels are renewable sources of energy unlike fossil fuels.

Different types of bio-fuels

Bio-fuels have been categorized into four types: first generation, second generation, third generation, and fourth generation.

The first generation bio-fuels are derived from vegetable fats, starch, and sugar, which are in turn derived from food-crops. The first generation fuels are also derived from animal fats. Biogas, bio-diesel, and vegetable oil are some examples of this type of bio-fuels.

The second generation of bio-fuels is mainly derived from waste biomass, thus making it a more balanced option compared to the first-generation bio-fuels. Different kinds of alcohols and diesel generated from wood fall into the category of second generation bio-fuels.

The third generation comprises of bio-fuels derived from algae. Algae are farmed on large scales for creating these bio-fuels. The algae fuels are extremely environment-friendly as they can easily decompose into the soil without harming it.

The bio-fuels in the fourth generation are derived by a method in which micro-organisms are raised to work with carbon dioxide to generate fuel.

### Advantages of bio-fuels

Bio-fuels prove advantageous in the following ways:

- Bio-fuels lessen the burden on gradually-vanishing fossil fuels.
- Bio-fuels are environment-friendly. They help reduce carbon emissions into the atmosphere.
- Bio-fuels, especially, bio-diesel prove to be very cost-effective for consumers.

### Disadvantages of bio-fuels

Bio-fuels are not bereft of criticism. Though beneficial for the environment, bio-fuels have its disadvantages, paradoxically in the environmental purview. Bio-fuels have received criticism for many reasons, a couple of which are stated below:

- Economists have long debated on the usefulness of first generation bio-fuels when compared to the lack of food they cause. Generating fuel from food crops makes food crops unworthy of human consumption. Some people believe that being a higher priority than fuel, food should not be farmed for making fuels but for human consumption.

Source : <http://www.hicow.com/bio-fuel/food-crops/algae-fuels-1.html>