

# BIODIESEL and our Net-Zero Ambitions

Biodiesel is an alternative fuel derived from **oleaginous** (virgin or recycled vegetable oil, animal fat, microalgal oil, etc.) biomass via a chemical reaction called **transesterification**. The transesterified oil has properties comparable to petroleum diesel, and it is compatible with existing infrastructure of diesel engines (can be blended in various proportions). An indicative biodiesel blending mandate of **5% biodiesel in high-speed diesel by 2030** is proposed (National Biofuel Policy 2018).

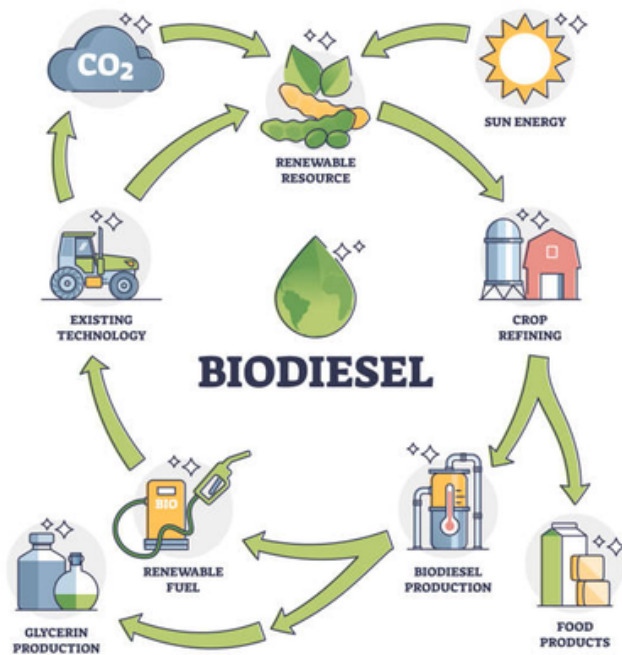
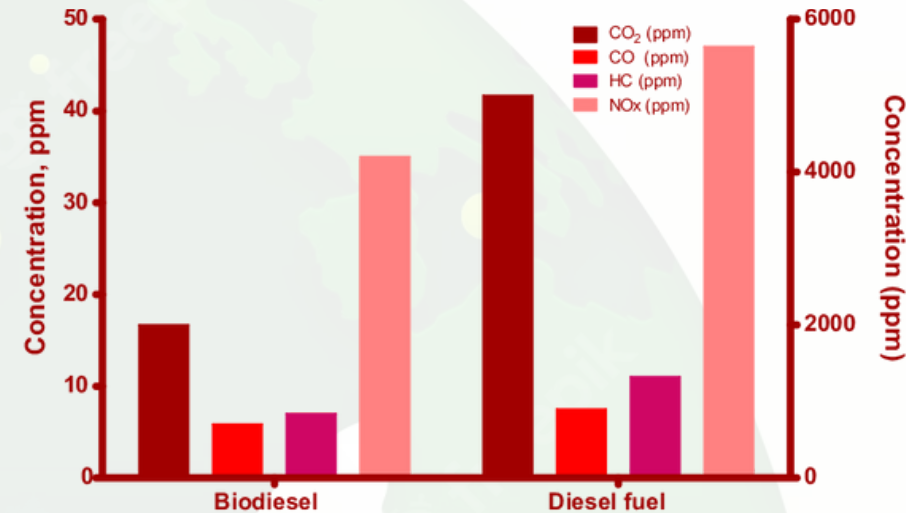


Image source-Adobe Stock

We are witnessing one of the largest transitions in recent times and **e-vehicles** are poised to occupy a **significant market share in road transport sector**.

However, the transition possibilities in the heavy duty segment (powered by diesel) is limited unless significant advancements in battery technology is achieved.

In the meantime, **biodiesel** (in pure or blended form) can be used in existing diesel engines and can contribute to our **Net-Zero Ambitions**. The utility of biodiesel is further established in light of the fact that diesel remains to be the most used fuel in the country.



Source-Arumugam, A., & Ponnusami, V. (2017). Production of biodiesel by enzymatic transesterification of waste sardine oil and evaluation of its engine performance. Heliyon, 3(12). <https://doi.org/10.1016/j.heliyon.2017.e00486>

## ADVANTAGES

- Renewable and biodegradable
- Cleaner emission profile

- Zero sulphur content
- Non-toxic and energy security



## LIMITATION

- Relatively poor cold flow properties
- May conflict with food supply

- Occasionally high NO<sub>x</sub>
- Hygroscopic