

Biofuel – a sustainable change without having to change anything else

Learn why and how Maersk ECO Delivery uses drop-in biofuel to help you meet your sustainability goals.

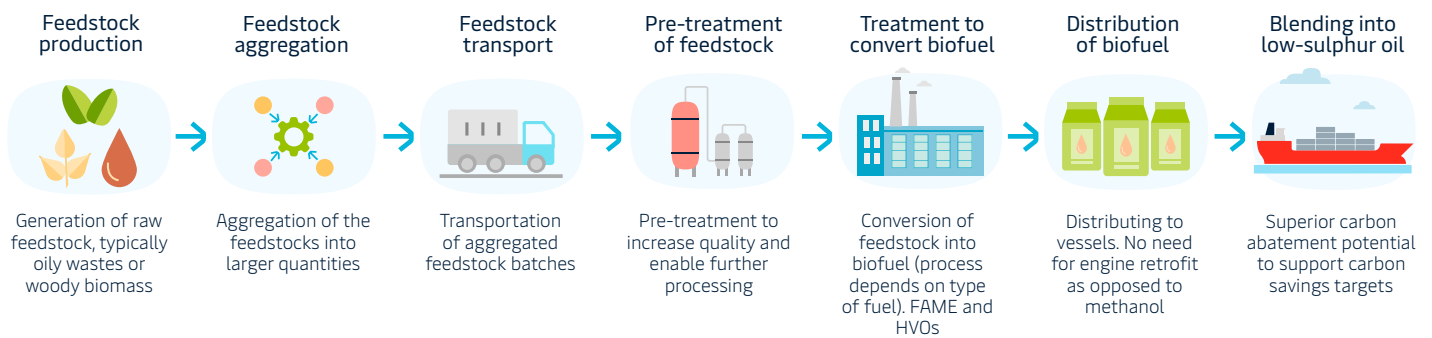
What are biofuels?

Biofuel is a fuel that is produced over a short time span from feedstocks, rather than by slow natural processes involved in the formation of fossil fuels, such as oil. Biofuels emit fewer greenhouse gases when burned in an engine and are generally considered carbon neutral as the climate emitted has been captured from the atmosphere by the crops used in the production process.

Drop-in biofuels and their benefits

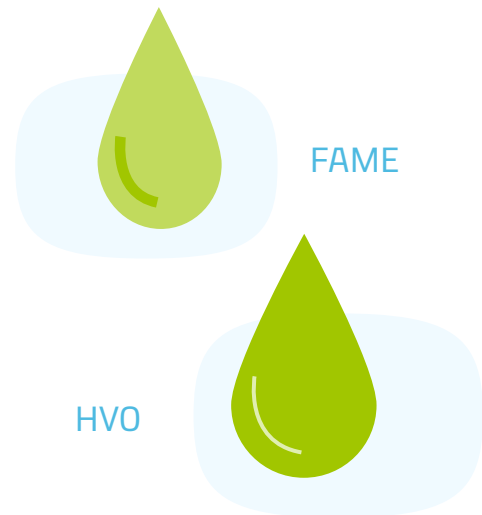
Biofuels that do not require engine modifications or blending with their petroleum counterparts are called drop-in biofuels. Drop-in biofuels are immediate viable solutions for decarbonisation, as opposed to 'future fuels' derived from gasification, recycled fossil feedstocks or renewable electricity (such as green methanol and methanol) that are still in development. They do not require special shipping engines and can be used directly in ships or in blends with fuel oil. All Maersk vessels can use blends of bio marine fuels that range from 10% to 100% with immediate effect. B30 (30% of bio marine fuels content) is the standard grade and most used blend.

Drop-in biofuel value chain

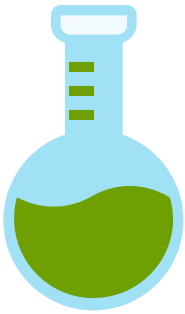


Types of biofuels – FAME vs HVO

There are two types of biofuels used in shipping - FAME (Fatty Acid Methyl Esters) and Hydrotreated Vegetable Oil (HVO). FAME is considerably less expensive than HVO and the residuals from its production can also be used in our vessel engines with high savings. Additionally, FAME used for shipping requires less processes without affecting the emissions savings as well. On the other hand, HVO has high production costs and a limited number of suppliers globally.



Hence, Maersk ECO Delivery uses FAME as the biofuel of its choice.



B30 – the blend approved by International Maritime Organization (IMO)

Biodiesel can be prepared in many different concentrations, usually depicted as 'B%', where 'B' is from Biodiesel and '%' is the percentage content.

B100 (pure biodiesel) is typically used to produce lower content blends and is rarely used as a transportation fuel. B30, on the other hand, is more popular because it represents a good balance of cost, emissions, cold-weather performance, materials compatibility and ability to act as a solvent and is also validated by The International Maritime Organization (IMO). The entire 326-vessel Maersk fleet received the approval to blend up to 30% in 2022.

Maersk sustainability policy on green fuels

Maersk has a stringent sustainability policy for bio feedstocks and biofuels used for ECO Delivery and is governed by three pillars:

1. Certification and proof of sustainability

- All biofuels must be certified by a 3rd party to ensure its sustainability.
- All fuels must have a proof of sustainability (POS) under a RSB or ISCC mass balance to support any emission saving claims made against a fuel.
- Maersk accepts RSB and ISCC certified biofuels with preference for RSB. The ISCC PLUS certification must have the additional GHG add-on (205-01).



2. Feedstocks

- Maersk only accepts wastes, residues and by-products as feedstocks with preference for the feedstocks for advanced biofuels in Annex IX of the EU Renewable Energy Directive (2018/2001) (with some exceptions). Forestry waste and residues must originate from FSC certified forest or equivalent.
- Maersk does not accept any first-generation crops (e.g., corn, soy, rapeseed, palm, sugar cane, sugar beet, sunflower, energy crops) or feedstock commonly used for feed purposes.
- Maersk does not accept any first-generation woody biomass (e.g., roundwood).
- Maersk does not accept any feedstock related to palm oil including waste and residue feedstocks derived from palm oil production (e.g., palm oil mill effluent (POME), empty fruit bunches, palm fatty acid Distillate (PFAD), spent bleach earth oil).

3. Lifecycle GHG savings

- Fuels must meet the minimum reductions in Article 29(10) of the EU Renewable Energy Directive (2018/2001) which is about 65-70% depending on production plant age compared to fossil reference fuel.

Cost drivers for biofuels

Biofuel prices are driven by three important factors:

1. Feedstock prices

- Maturation of regulation for collection of waste & residues outside Europe, North America and China.
- Certification of waste & residues suppliers.
- Development of new feedstocks streams.



2. Success of new technologies developments

- Efficiency of new technologies: The technical success and thus efficiency of new types of biofuels will determine the ability to influence incumbent prices.
- Speed of capacity scaling: Time required for meaningful scaling of new capacity will determine the degree to which new technologies can set market prices.

3. Demand drivers

- A strong decarbonisation agenda will drive the demand and willingness to pay for biofuels.
- Development of regulatory targets and incentives remains the key driver of biofuel demand and 2G-specific demand (e.g. countries outside EU and US increasing their support, IMO approach in biodiesel blends, etc.)

Future of biofuels

Technologies are being developed to enable more scalable and competitive methods of producing biofuels such as methanol (bio-methanol and e-methanol), ammonia (Green Ammonia) and lignin fuels (new biofuel based on lignin-alcohol blends). These biofuels can be used for ECO Delivery because they are fully zero-emission fuels and can be produced at scale from renewable electricity alone. We are excited about these developments and are keeping a keen eye on them to find the next best fuel for our fleet.

For any further queries regarding biofuels in shipping, do get in touch with our experts. [Contact us](#)