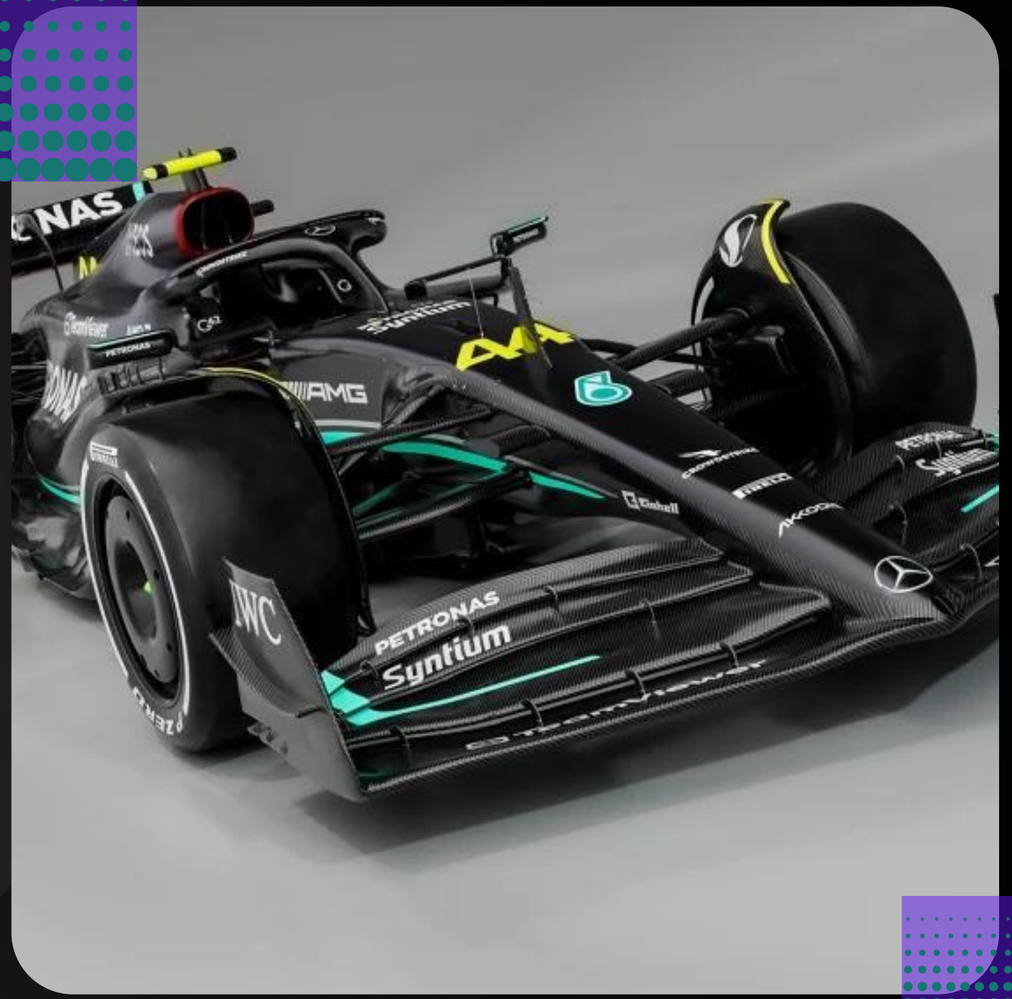
PETCO SUSTAINABILITY SOLUTIONS

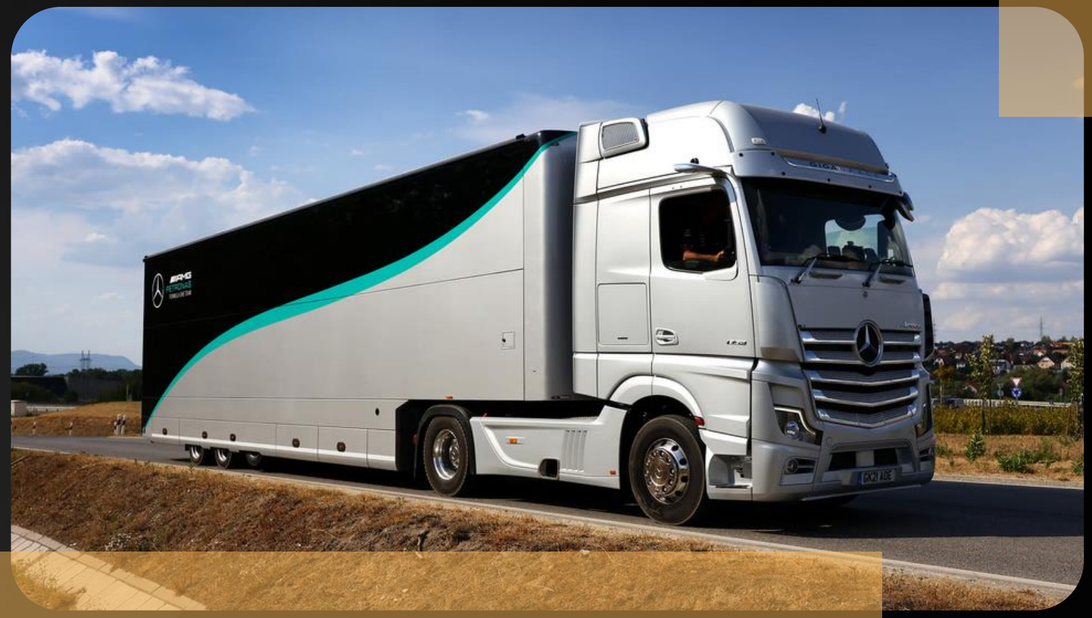
AMG PETRONAS FORMULA ONE TEAM

Unleashing the power of sustainability in F1's realm



MERCEDES-AMG PETRONAS F1

Targeted over 60% emissions reduction and 200tons CO2e saved through biofuels use for F1's European Season



PTUK together with the PTLCL Sustainability Solutions provide solution to power 22 Mercedes' trucks with HVO100 totaling of 89,000 litres from May to July 2023

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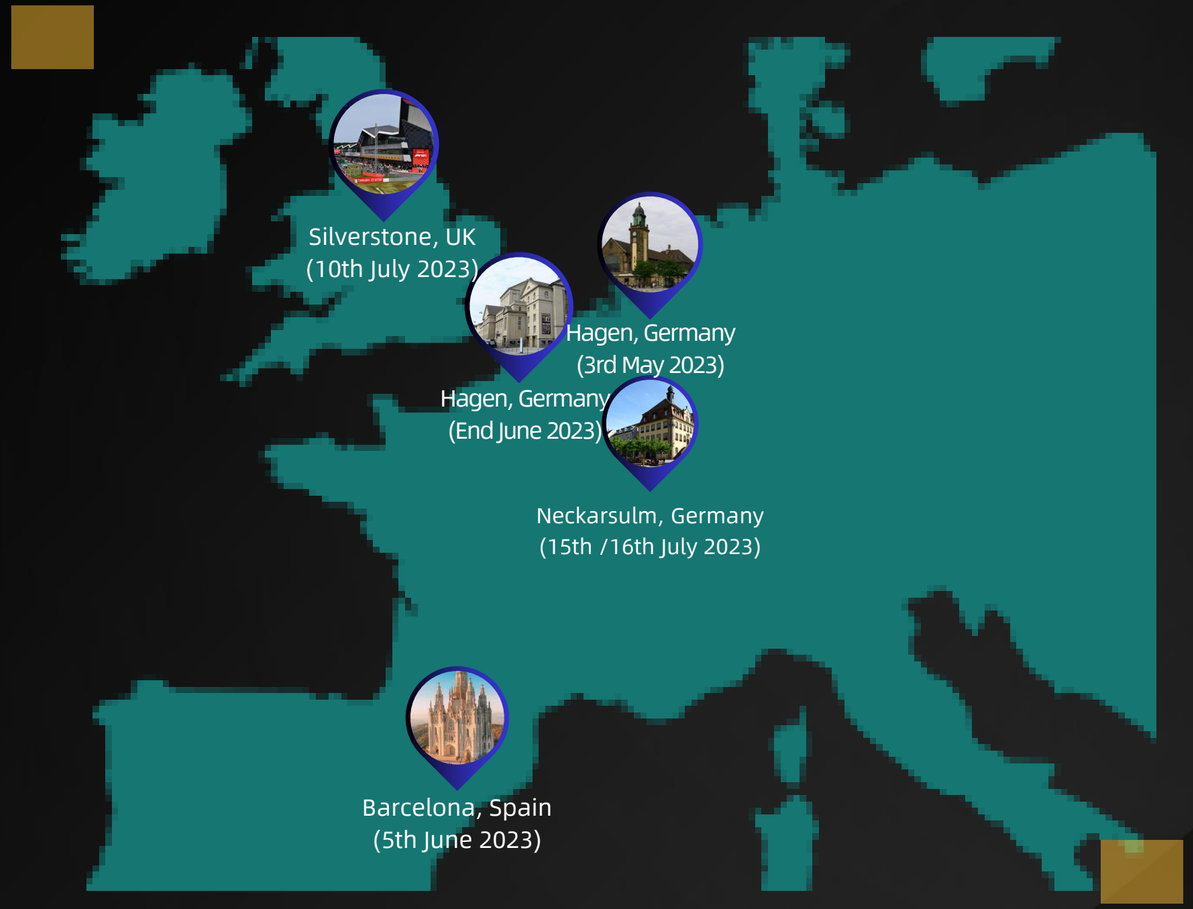

5 Identified Refueling Points

Over nine races across Europe, the fleet of 22 Mercedes-Benz Actros trucks, which transport all the freight required for each race, will refuel with HVO100, a second-generation biofuel.

From their departure points in the UK and Germany to arriving in Imola and then travelling through Europe.

Each truck will cover between 9,000 to 10,000 kms, which we aim to be fully powered by HVO100, reducing the emissions for each kilometre covered by 89%.

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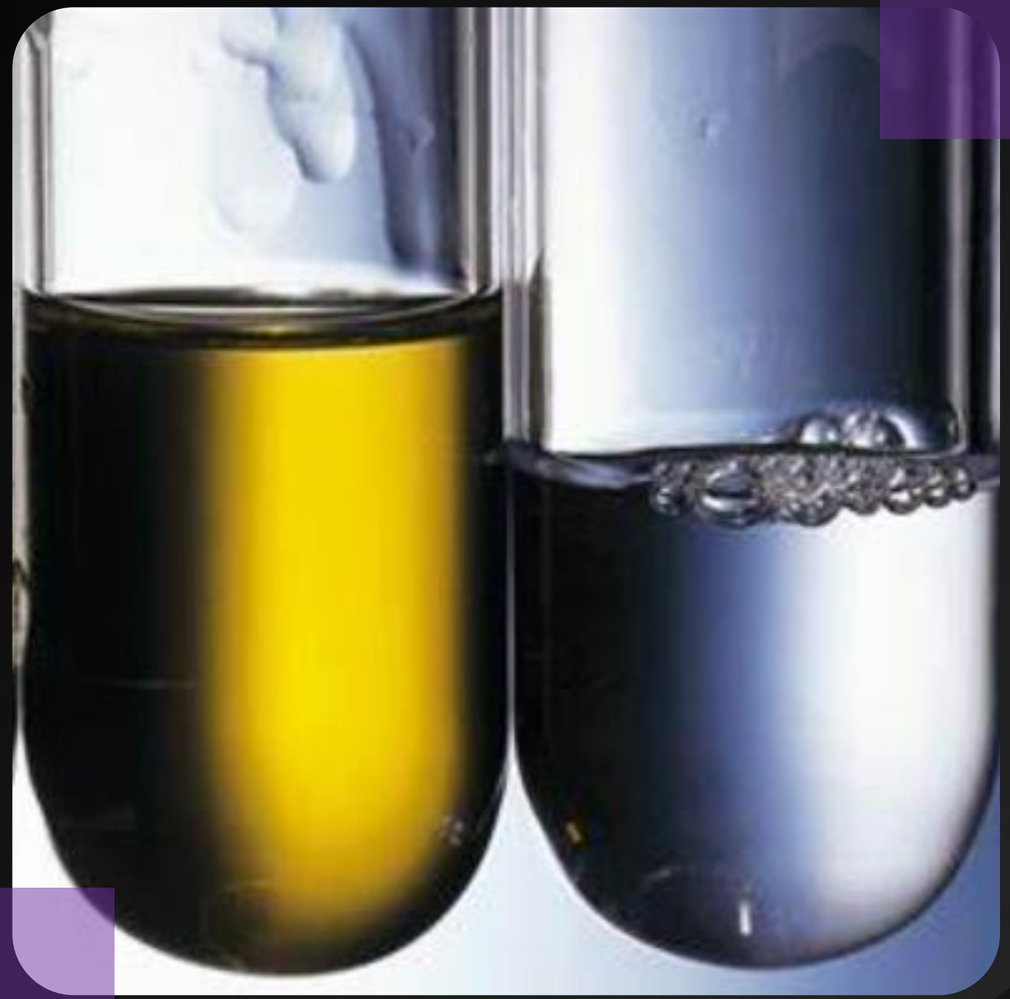

HVO100 (Hydrotreated Vegetable Oil)

Hydrotreated Vegetable Oil is one of several renewable biofuel alternatives to fossil fuel diesel that have emerged in recent years.

Although ‘vegetable oil’ is in the name, it can be produced from a range of different vegetable and non-vegetable feedstocks, including used vegetable cooking oil, animal fat residue and on-food grade crop-based vegetable oils.

Many of these oils can also be used to produce other renewable fuels like biodiesel. However, HVO is a fundamentally separate product that should never be confused with biodiesel. The key is the ‘H’ in HVO.

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How HVO diesel is made

HVO diesel, is produced through a process called hydrotreating. Here is a simplified explanation of how HVO diesel is made:

Feedstock Selection & Pre-treatment: Suitable vegetable oils or animal fats are selected as the feedstock for HVO diesel production and will undergo pre-treatment to remove impurities such as water, free fatty acids, and solid particles.

Hydrotreating: The pre-treated feedstock is then subjected to hydrotreating. In this process, the feedstock is mixed with hydrogen gas and passed through a catalyst bed in a reactor vessel. The catalyst helps facilitate the reaction between the feedstock and hydrogen at high temperature and pressure. This reaction, known as hydrotreatment, removes impurities, saturates unsaturated fatty acids, and reduces the oxygen content in the feedstock.

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How HVO diesel is made

Fractionation: After hydrotreating, the resulting mixture is cooled and sent to a fractionation unit. This unit separates the different components of the mixture based on their boiling points. The lighter hydrocarbons, such as gasoline-range components, are removed, leaving behind a diesel-range hydrocarbon fraction.

Blending and Additives: The diesel-range hydrocarbon fraction is blended with additives to enhance the fuel's properties. These additives can improve the performance, efficiency, and emissions profile of the HVO diesel.

Quality Control: The final HVO diesel undergoes rigorous quality control testing to ensure it meets the required specifications and regulatory standards for use as a diesel fuel substitute or blend.

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Is HVO100 better than other renewable diesels on the market?

Biodiesel is a cheaper, lower quality alternative. Although it is produced from vegetable oils and fats like HVO, the treatment process (called ‘transesterification’) is much simpler. The result is an ‘ester’ that is similar to fossil diesel, but prone to degradation and other performance issues.

In contrast, the hydrotreatment process for HVO produces an ester-free liquid that has none of the associated performance issues. Its stability and quality also mean that, unlike biodiesel, HVO is 100% interchangeable with conventional diesel.

Burning HVO produces far fewer greenhouse gas emissions than conventional diesel because the carbon emitted is cancelled out by the carbon pulled from the atmosphere when the feedstock was growing. It also produces fewer air pollutants than biodiesel.

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Thank you for joining me today

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