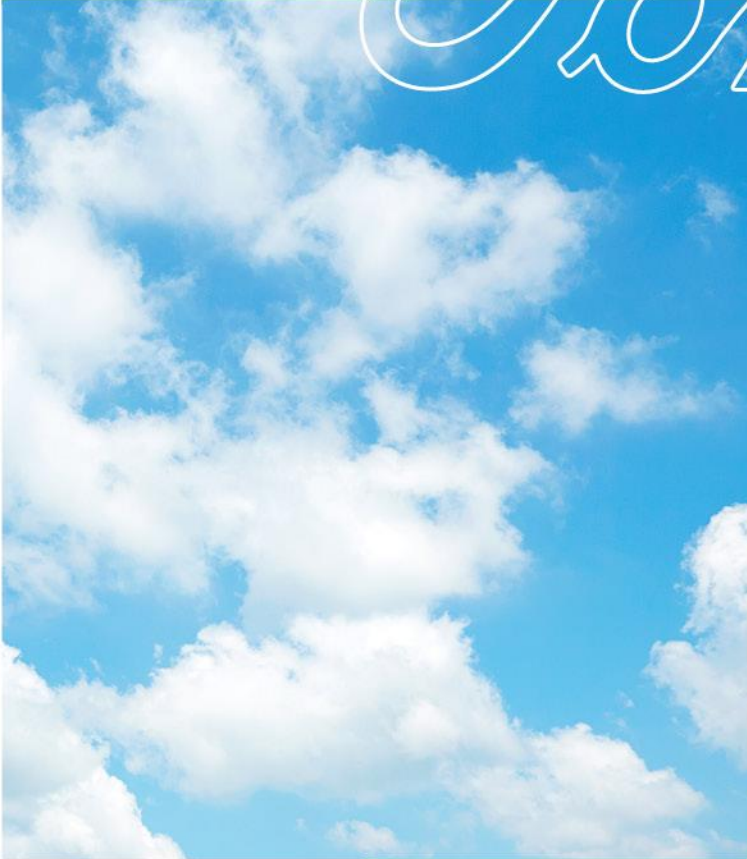
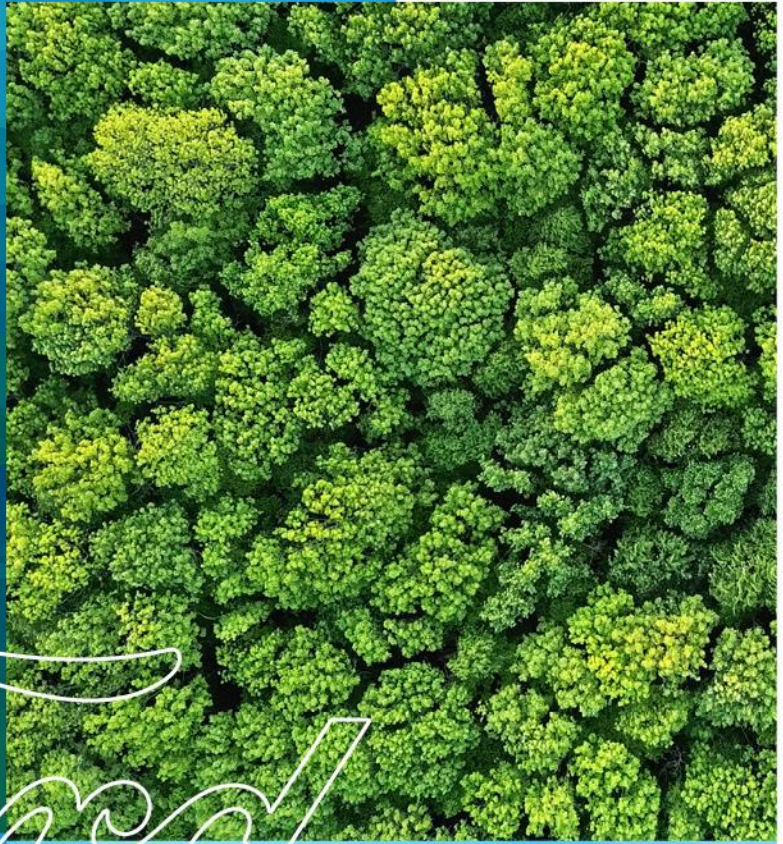




# DIESEL FUEL ALTERNATIVES



HVO & GTL






# INTRODUCTION

For many of our customers, vehicle fuel accounts for the majority of their operating costs, so reducing fuel consumption and CO2 emissions is a high priority.

Hydrotreated Vegetable Oil (HVO) and Gas-To-Liquid (GTL) are both alternative fuels **approved by Ford** for diesel engine Commercial Vehicles to help achieve a more environmentally friendly fleet.

They are cleaner burning fuels that enable improved emissions and reduced soot / Diesel Particulate Filter (DPF) loading. Therefore, they are seen as more environmentally friendly than conventional EN590 diesel.

The table below shows the Ford vehicles approved for HVO and GTL use:  
(NSCs to localise)

	Vehicle	MY	Engine	Produced from
	Transit	19.75MY+	2.0L EcoBlue	May 2019
	Transit Custom	19.75MY+	2.0L EcoBlue	May 2019
	Ranger	19.5MY+	2.0L EcoBlue	March 2019
	Transit Connect	19.75MY+	1.5L EcoBlue	May 2019
	Transit Courier	21.25MY+	1.5L Duratorq	November 2020

# HYDROTREATED VEGETABLE OIL (HVO)

## WHAT IS IT?

- HVO is a form of renewable paraffinic diesel fuel produced from a wide variety of raw materials including waste cooking oil using conventional oil refinement processes.  
(This is not unprocessed cooking oil you buy in shops)
- HVO fuels are covered by European Standard EN 15940 for paraffinic diesel fuels in EU markets
- HVO is not equivalent to “1st generation” Biodiesel (B5-B30) fuels used today in some EU markets
- HVO refinement processes use hydrogen in-lieu of methanol (used for biodiesel production) as a catalyst, for a more stable, clean burning fuel
- HVO products are high quality fuels with properties very similar to petroleum-based pump diesel

## BENEFITS

- HVO fuel is an environmentally friendly alternative to traditional diesel and biodiesel fuels
- HVO can significantly reduce greenhouse gas emissions compared to pump diesel, particularly if made from recycled raw materials
- HVO is more stable than biodiesels, without the potential detriments like increased NO<sub>x</sub> emission, deposit formation, storage stability problems, poor cold properties, or faster aging of engine oil (except there may be a slight detrimental impact on oil service life for very slow speed urban delivery drivers)
- HVO does not require vehicle updates or have any performance limitations
- HVO can be mixed with petroleum pump diesel in any ratio up to 100%
- The service interval/warranty is unaffected by use of HVO

## AVAILABILITY

- HVO usage is expecting to see a steady growth in Europe over the next 5 years, as more production becomes available

## RANGE OF RENEWABLE RAW MATERIALS

- Used cooking oil
- Waste animal fat from the food processing industry
- Waste fat from the fish processing industry
- Technical corn oil
- Tall oil pitch
- Camelina oil
- Jatropha oil
- Soy oil
- Rapeseed oil

## HVO BRANDS IN EU MARKETS

- Neste
- Care Diesel
- HVO 100
- XTL
- NExBTL
- Evolution Diesel (HVO/EN590 blend)
- Blauwe Diesel (HVO/EN590 blend)
- R33 BlueDiesel (HVO/EN590blend)

Other HVO/EN590 blends may be available

# GAS-TO-LIQUID (GTL)

## WHAT IS IT?

- GTL is another form of paraffinic fuel that uses natural gas (methane) to synthesise a range of petrochemical fuels, including diesel
- Natural gas is often a waste product of oil refineries or produced in regions where it is difficult and expensive to transport because of the extreme cooling required.
- GTL's liquid state makes it easy to transport and handle
- GTL can be used as a drop in fuel, replacing normal diesel with no engine modifications
- GTL fuels are covered by European Standard EN 15940 for paraffinic diesel fuels in EU markets
- GTL is odourless and readily biodegradable

## BENEFITS

- GTL fuel is virtually free of impurities, such as sulphur, metals, nitrogen and aromatics, making it less harmful to the environment and allowing the engine to run more smoothly and quietly.
- This purity means it burns more cleanly – the reduction in soot emissions greatly reduces the need for diesel particulate filters to be refreshed, so it is ideal for vehicles used predominantly at low speeds
- The reduction in pollutants contributes towards meeting local environmental regulations
- GTL is proven to have better starting performance in low temperatures due to its low density and higher cetane number (speed of combustion of a diesel fuel), so it is great for all year-round reliability
- GTL does not require vehicle updates or have any performance limitations
- The service interval/warranty is unaffected by use of GTL



## AVAILABILITY

- GTL is not yet widely available to the general public at fuel pumps – currently it is aimed more at captive fleets with their own refuelling facilities.
- It can be delivered to depots or worksites just like regular diesel, so it is especially appropriate for fleet hubs (airports, local councils, postal services, construction vehicles)

## GTL BRANDS IN EU MARKETS

- Shell GTL