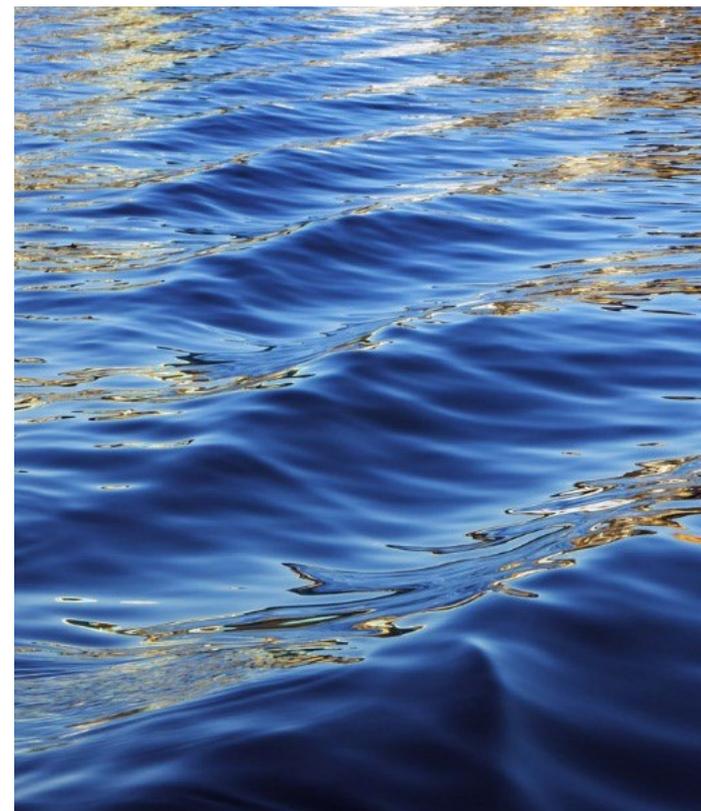




# HVO

What is it and what does it mean for the future of Oil Fired Home Heating?



# HVO – Webinar Key Questions

1

What is HVO?

2

Where can HVO  
be used and how  
can it be stored?

3

What is its future  
for home  
heating?

# What's is driving change in the U.K. – The Facts

The UK government has now confirmed that Kerosene boilers will be banned from new builds by 2025, and new Kerosene boilers will no longer be available from 2035.

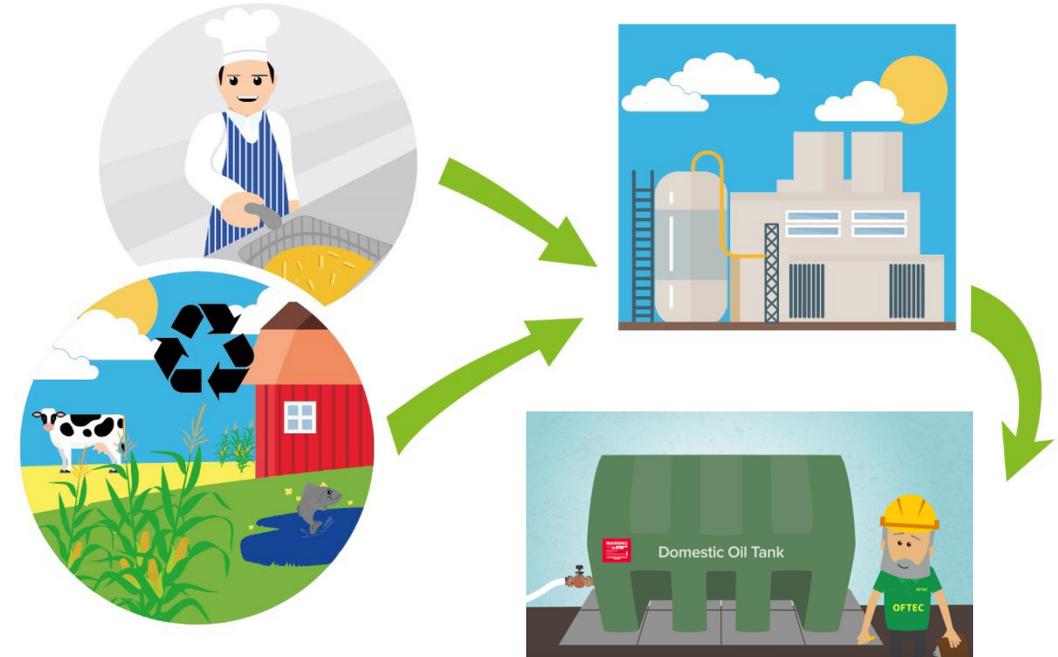
Currently less than a quarter of a million of UK's 29 million homes have air or ground source heat pumps. In 2019, 27,000 were installed – compared to the 100,000 additional homes connected to the gas network and the 1.7 million replacement boilers installed in the same year.

Air Source Heat pumps account for less than 2% of the market in the UK currently. However there has been a 28% rise in the installations of Heat Pumps in 2021.

The government has pledged for 600,000 ASHP to be installed per year by 2028.

# What is HVO?

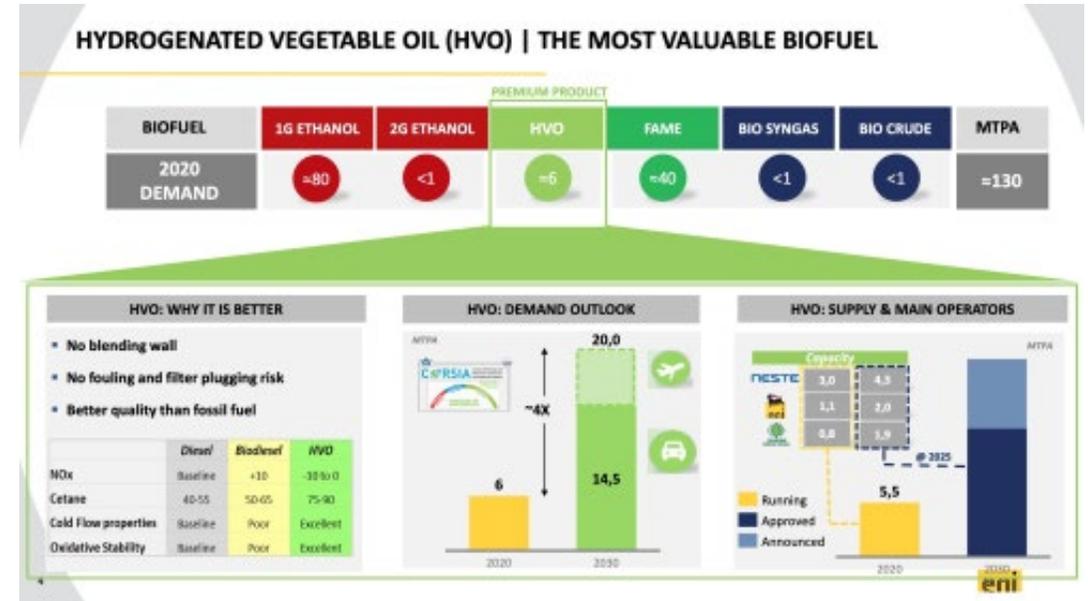
- ❑ HVO stands for hydrotreated vegetable oil, sometimes known as Renewable Diesel.
- ❑ It is part of the paraffinic family of fuels, is a fossil-free alternative to mineral diesel, resulting in up to 88% reduction in Greenhouse Gas emissions.
- ❑ It is also specially formulated to deliver a cleaner burn, and produces significantly lower NOx and particulate matter



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# Where is it made and supply chain?

- ❑ HVO production plants can use a wide range of feedstocks, such as native vegetable oil, animal fats, fish oil and used cooking oil, as well as oils that are by-products of different industrial processes, such as tall oil from the wood and paper industries, palm oil mill effluent and palm fatty acid distillate.
- ❑ Europe is producing over 20 billion litres per annum now of HVO
- ❑ The UK already has some dedicated production facilities for the production of HVO.



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# What is HVO – Is it just Biodiesel?



When it comes to knowing the difference between HVO renewable diesel and traditional biodiesel, the differences may seem subtle but are quite different.



With its paraffinic petrochemical structure, HVO is functionally almost identical to fossil Kerosene and can, therefore, be used and handled as a drop-in alternative.



However, while similar to regular diesel in terms of energy content, density, viscosity and flash point, HVO fuel has a number of environmental advantages over fossil fuels.



The chemical process used to manufacture HVO fuel ensures a consistent product that contains no esters or contamination; factors which can adversely affect the performance of the fuel both at the point of use or after extended storage.

# What is the Future for Home Heating in the U.K?

- ❑ The Government are committed to stopping the use of fossil fuels in Home Heating over the coming years.
- ❑ Oil and Gas Boiler will both be unavailable for sale to new properties first then, banned for replacement in the years to come.
- ❑ The UK Government believe that Air Source heat pumps will replace a large number of these gas boilers, with an estimate of 600K a year being fitted by in a few years' time.
- ❑ It also very likely that some of these Air Source units will be hybrid units with an HVO burner to give top up performance that will be needed in older properties.
- ❑ It may be that smaller Oil Tanks will be needed for properties where hybrid units are fitted.



Hybrid Air Source/HVO Unit

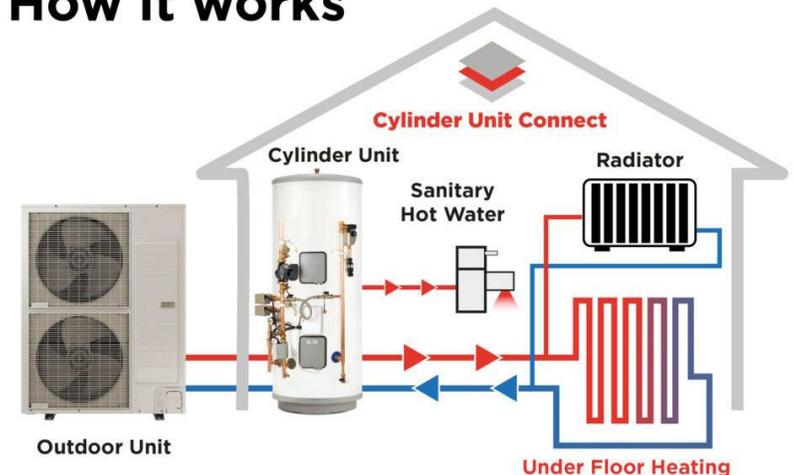
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# What's an Air Source Heat Pump and what are its challenges?

An air source heat pump (ASHP) works by transferring heat absorbed from the outside air to an indoor space. This works via the wet central heating systems to heat radiators and provides domestic hot water. Heat pumps work similarly to a refrigerator: they absorb heat and transfer it to another medium.

- ❑ High levels of insulation in the property will be required, meaning external cladding on older properties and upgraded glazing
- ❑ Underfloor heating or much larger radiators will be required on the system.
- ❑ Impractical for many homes in the UK due to the cost of upgrading the ERP value.

## Air Source Heat Pumps How it works



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# What is the Future for Heating Oil?

- ❑ The direct answer as you may have guessed to the question for Home Heating Fuel in many older and off grid homes is **HVO**.
- ❑ As mentioned in previous slides HVO is a drop in alternative to Kerosene, which can easily be stored using Harlequin Tanks.
- ❑ All New Harlequin Domestic Oil Tanks are HVO ready and Oil Boiler manufacturers such as Warmflow, have HVO ready boilers currently on sale.
- ❑ Currently HVO is subject to the road fuel duty so it is more expensive by a reasonable amount to Kerosene but this is being looked into for the future.



**Example of HVO Boiler**

# HVO Home Heating in detail and SAP?

- ❑ The UK Government has declared HVO as an option to heat homes in the UK where Air Source Heat pumps or Electricity would be impractical.
- ❑ This would be at least most current off grid homes in the UK that currently use Kerosene or LPG.
- ❑ Just recently the SAP rating system for homes has been given rating for HVO boilers allowing these to be fitted in energy efficient new homes.
- ❑ All New Harlequin Domestic Oil tanks are HVO compliant giving customers comfort that the investment now is one in the future.



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# Harlequin ITE, ITT, HQi and Diamond Range

We have a range of [bunded oil tanks](#) available in capacities ranging from 650 to 9250 litres.

They are available in 3 different models:

1. *HQi & Diamond – Bottom Outlet Tank with no fittings & gauge*
2. *ITE – Bottom Outlet Tank with fittings pack & gauge*
3. *ITT – Top Outlet Tank with fittings pack & gauge*

[Underground Tanks](#) are also available in 1400 and 2500 sizes

**Bunded Oil Tanks**

<b>650 HQi / ITE / ITT</b> <b>SUBLINE</b> Length 1,750mm Width 670mm Height 1,350mm Capacity 670 litres OFCERT License No: 064420044	<b>1000 HQi / ITE / ITT</b> <b>SUBLINE</b> Length 2,150mm Width 690mm Height 1,420mm Capacity 1,050 litres OFCERT License No: 064420057	<b>1100 HQi / ITE / ITT</b> <b>SUBLINE</b> Length 1,880mm Width 890mm Height 1,550mm Capacity 1,050 litres OFCERT License No: 064420058	<b>1200 HQi / ITE / ITT</b> <b>LOW PROFILE</b> Length 1,900mm Width 1,600mm Height 950mm Capacity 1,330 litres OFCERT License No: 064420059
<b>1225 HQi / ITE / ITT</b> <b>SUBLINE</b> Length 2,110mm Width 840mm Height 1,550mm Capacity 1,225 litres OFCERT License No: 064420061	<b>1300 HQi / ITE / ITT</b> <b>SUBLINE</b> Length 2,100mm Width 950mm Height 1,540mm Capacity 1,344 litres OFCERT License No: 064420060	<b>1400 HQi / ITE / ITT</b> <b>HORIZONTAL</b> Length 1,900mm Width 1,500mm Height 1,420mm Capacity 1,450 litres OFCERT License No: 064420058	<b>1450 HQi / ITE / ITT</b> <b>VERTICAL</b> Diameter 1,560mm Height 1,550mm Capacity 1,590 litres OFCERT License No: 064420063
<b>2000 HQi / ITE / ITT</b> <b>HORIZONTAL</b> Length 2,360mm Width 1,350mm Height 1,450mm Capacity 2,050 litres OFCERT License No: 064420064	<b>2500 HQi / ITE / ITT</b> <b>HORIZONTAL</b> Length 2,450mm Width 1,450mm Height 1,470mm Capacity 2,570 litres OFCERT License No: 064420065	<b>3500 ITE / ITT</b> <b>HORIZONTAL</b> Length 2,450mm Width 1,270mm Height 1,550mm Capacity 3,450 litres OFCERT License No: 064420066	<b>5400 ITE / ITT</b> <b>VERTICAL</b> Diameter 2,550mm Height 2,100mm Capacity 5,300 litres OFCERT License No: 064420068

**7500 ITE / ITT**  
**VERTICAL**  
 Length 2,940mm  
 Width 2,350mm  
 Height 2,800mm  
 Capacity 8,088 litres  
 OFCERT License No: 064420070

**9,250 ITE / ITT**  
**VERTICAL**  
 Length 3,140mm  
 Width 2,510mm  
 Height 2,800mm  
 Capacity 9,382 litres  
 OFCERT License No: 064420071

**HQi**  
 Bundled Oil Tank only.

**ITT**  
 Bundled Oil Tank with a Tank Pack, including a top outlet fitting kit and an Apollo electronic gauge.

**ITE**  
 Bundled Oil Tank with a Tank Pack, including a bottom outlet fitting kit and an Apollo electronic gauge.

**Diamond Oil Tanks**

<b>1000SSL</b> <b>SUBLINE</b> Length 1,900mm Width 640mm Height 1,465mm Capacity 999 litres	<b>1400SSL</b> <b>SUBLINE</b> Length 2,110mm Width 620mm Height 1,670mm Capacity 1,435 litres
<b>1650H2B</b> <b>HORIZONTAL</b> Length 2,010mm Width 1,550mm Height 1,450mm Capacity 1,660 litres	

**KEY FEATURES**  
 (Bunded Oil Tanks & Diamond Tanks)

- Integrally Bunded
- Made from durable Medium Density Polyethylene material
- Industry leading heavy duty lid design
- CE / OFCERT licensed Bunded Oil Tanks
- CE Approved Diamond Tanks

\*Warranty: 10 year conditional warranty only when product is registered on our website.

**Underground Oil Tanks**

<b>UGD1400</b> <b>VERTICAL</b> Length 2,105mm Width 1,255mm Height 2,100mm Capacity 1,465 litres	<b>UGD2500</b> <b>VERTICAL</b> Length 2,450mm Width 1,400mm Height 2,300mm Capacity 2,655 litres
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**KEY FEATURES**

- Industry leading heavy duty lid design
- Comes with interstitial leak detection monitor
- Complies with PPC7y and BS5410

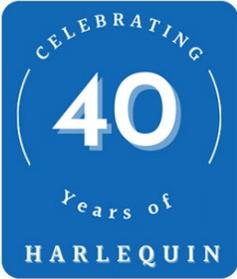
Please Note: Tank capacities are nominal. All OFCERT license numbers are for ITE models. ITT OFCERT license numbers are available on the OFCERT website. All information contained herein is subject to correct time of publication. Harlequin reserves the right to amend product specifications without notice.

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Putting 40 years of manufacturing experience in practice.....



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Harlequin is a leading UK manufacturer of innovative polyethylene storage tanks and systems with 40 years' experience. It has developed a diverse and innovative product range including heating oil tanks, diesel tanks, wastewater treatment systems, pump stations, rainwater harvesting systems, hot water storage tanks and a range of other products. With a strength of 100 employees, Harlequin is one of the fastest growing manufacturing companies in Northern Ireland.

Exceptional customer service is at heart of Harlequin's business, supplying quality products within a trusted and professional service. The company has a number of internationally recognised management system certifications including ISO 9001, 14001 and 45001. Harlequin is a member of OFTEC, the British Water Association and the National Association of Drainage Contractors (NADC).

### Together, we are



Responsible



Respectful



Passionate



Creative



One Team

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