



**Subject:** Clean Growth – Transforming Heating  
**Date:** 18th February 2019  
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### **ABOUT THE FEDERATION OF PETROLEUM SUPPLIERS (FPS)**

As a trade association, the Federation of Petroleum Suppliers (FPS) membership base delivers heating oil to residential homes as well as marine, agricultural, commercial and industrial businesses. With over 120 distributor members owning some 2500 tankers and 60 Associate members, the FPS represents around 80% of the volume distributed in the UK and Republic of Ireland. It provides members with a collective voice for the industry at national level, services to assist members in optimising their business efficiencies including depot audits, certification schemes, tanker driver training. The FPS also promotes best practice in the industry through the FPS Code of Practice.

Membership is organised on a geographical basis with regional meetings, and the FPS also organises an annual exhibition FPS EXPO and member conferences. Governance is through a council, to which each region nominates a representative.

The FPS offers support and a voice for the oil distributor at Government level to try to ensure a fair deal for the industry as well as enabling distributors to meet and discuss current issues.

Any questions regarding this submission can be directed at the undersigned or the FPS Technical Manager Tony Brown.

### **Clean Growth 4.1.79 Evidence based Characteristics of low carbon options**

***1: Does this overview of the strategically important issues, as identified on the course of our review of the evidence, highlighted the key issues?***

**NO**

***Are there important issues missing ?***

**YES**

Whilst we agree with mixed solutions and like the common-sense approach towards 'long term' view that this report takes. Our concern is that the whole document is based on possible outcomes without any hard evidence to support a clear pathway to possible solutions for low carbon heat in any sector.

Our understanding is that Government should be totally neutral when any framework policy or decision that impact certain sectors like the domestic fuel industry. This focuses heavily on Biogas, Electrification, hydrogen and bioenergy, but no discussion about Bio fuels and liquid fuels.

The FPS continues to support the Government position on low carbon heat and a clear pathway to 2050 onwards in which we believe that bio fuels and liquid fuels can and should play a major part moving forward.

## **2: Are there any important pieces of evidence that require further consideration?**

### **YES**

The FPS has been working with other Trade Associations and BEIS to develop a pathway from fossil fuels to Bio fuels/Liquid fuels and further consideration should be given to this type of fuel which should not be omitted.

We note that Government is recommending mainly electrification without focusing on all options, Global activity to develop a liquid fuel and supply sustainable low carbon fuels continues apace.

Key areas of this work include:

- i. The sustainability of biofuels is a well-documented issue and effective regulatory policies have led to a significant move away from raw materials (feedstocks) such as wheat, corn palm and rapeseed oil in favour of waste materials such as used cooking oils (UCOs) and fats, oils and greases (FOGs).
- ii. Studies carried out to date indicate that low carbon liquid fuels can provide heat performance that is as good, if not better, than fossil fuels such as kerosene. There were successful trials of a bio liquid fuel called B30k (30% FAME and 70% Kerosene) in 2010. The heating systems continued to operate efficiently. The carbon emissions from this mix are lower than LPG (0.225 kgCO<sub>2</sub>/kWh v 0.242 kgCO<sub>2</sub>/kWh). More recently, OFTEC members have been conducting laboratory combustion trials burning Hydrated Vegetable Oil (HVO) blended with kerosene at blends between 30% and 100% HVO.
- iii. We understand that Virgin Atlantic are working on a new fuel with a company called Lanzatech and have had success with an carbon neutral product <http://www.iata.org/pressroom/Documents/Virgin-atlantic-saf-press-release.pdf>.
- iv. We also understand that BP are working with Fulcrum to produce aviation fuel from waste products in the US <https://www.bp.com/en/global/corporate/media/latest-news/construction-begins-on-waste-to-fuel-plant.html>
- v. E-fuels offer a more complete longer-term solution to the problem of placing too great a dependence on renewable electricity, helping to reduce demand by harnessing renewable electricity generated in sunny or windy locations to make liquid fuels that can be used anywhere in the world. However, while the potential of e-fuels is exciting, their development at a commercial scale is still some years away, making biofuels more important in the short term.
- vi. Employing low carbon liquid fuels such as this for off-grid heating would also reduce the burden on electricity generation and grid capacity, particularly during periods of high demand during winter when it is considerably colder, and days are darker and there is often little or no power generation from wind or solar sources.

This approach is consistent with research elsewhere in Europe that suggests adopting a more diverse energy model is the most cost-effective way to reduce emissions. European trade body, Eurofuel ([www.eurofuel.eu](http://www.eurofuel.eu)) has also published a report on heating with liquid fuels which provides further information on liquid Fuel

[https://www.eurofuel.eu/images/Heating\\_with\\_liquid\\_fuels\\_Guide.pdf](https://www.eurofuel.eu/images/Heating_with_liquid_fuels_Guide.pdf)

At the February Eurofuels Lignofuels conference in Amsterdam on Feb 8th, 2018, Tristan Suffys, Secretary General of Eurofuels presented perspectives for renewable liquid fuels in heating. [https://www.eurofuel.eu/images/Eurofuel\\_presentation\\_-\\_Lignofuels\\_conference\\_080218.pdf](https://www.eurofuel.eu/images/Eurofuel_presentation_-_Lignofuels_conference_080218.pdf).

- vii. A comprehensive study carried out by the Freiberg University of Mining and Technology in Germany identifies four main options to generate new liquid fuels: Fermentation, liquefaction, synthesis and transesterification or hydrogenation.

<https://www.eurofuel.eu/library/publications/item/256-what-future-liquid-fuels-to-heat-our-homes>

The comparative space & water heating costs for a typical 3-bedroom house using Sutherland tablets data for January 2019 indicates in Great Britain that oil heating is one of the lowest forms of heating in the UK.

- Electricity £2004
- Gas (British Gas) £1025
- LPG (Condensing) £1626
- Oil (Condensing) £1143
- ASHP (Underfloor) £1355
- ASHP (Radiator) £1771

### ***3: Do you agree with the set of strategic inferences we have drawn up?***

#### **NO**

Whilst we agree that the evidence as stated within this report makes important contribution to low carbon heating, no single type of heating would be an acceptable overall solution due to variable factors. Hybrid system would certainly be a suitable short-term option with liquid fuels. Costs and development of key infrastructure play a major part in every household's decision and should be considered carefully. That is why the FPS believes that changing to bio/liquid fuels maintains a low-cost option to the consumer.

The Government should look at a tiered approach to achieving the 2050 carbon reduction target. The policy framework should set a pathway of home heating carbon emission reductions with set targets/milestones.

The Government should not define how those milestones or target are met nor the technology that should be used to meet them. Industry can adapt all aspects of technological innovation thereby providing the means for consumers to make cost competitive choices in meeting those targets

#### **Evidence based: Achieving change 5.3.6**

**1: Does this overview of the strategically important issues, as identified in the course of our review of the evidence, highlight the key issues?**

NO

YES

The FPS supports the basis and content of this report, but we believe that liquid fuels is a direct replacement from fossil fuels with minimal cost to the consumer and for those in fuel poverty supporting the concerns raised in 5.5 and 5.18.

FPS can help engage with consumers via members once liquid fuels is seen as part of the solution.

**2: Are there any important pieces of evidence that require further consideration?**

We have a number of comments on this section

- The overall pathway for electrification and hydrogen needs to be made clearer.
- Data on air and ground source heat pumps should be considered further - not only the installation cost - but the total repair and running costs of such equipment.
- The statement on instant heating using electrification is incorrect. Heat pumps are slow to respond to heat demand so cannot be classed as instant heat. Running costs are difficult to control from this type of heating. Standard daily rates in normal operating conditions are around £3.20, but double in cold conditions. How would these costs be justified long term to the end consumer and for those in fuel poverty and vulnerable elder people.
- At a recent low carbon conference, the renewable energy suppliers quote 'they can meet 85% of UK market', however this dropped to between 50 and 60% when the beast from the east was happening, which supports that case for more than one solution to low carbon energy.
- Introducing more expensive heating solutions such a heat pumps will have a negative impact on rural/urban householders. The FPS believes it is important to consider biofuels/liquid fuels to obtain low carbon objectives.
- Kerosene used for domestic home heating is a by product of the oil distillation process. If there is major change to demand, e.g. many homes start to move away from kerosene-based heating, this may affect the viability of the whole market, with significant impacts on the remaining consumer and businesses in the sector.
- We would welcome and suggest an impact study on the relationship between the fuel sector and other sectors as part of this exercise.
- Many off-grid households simply can't afford the high upfront installation costs of renewable heating technologies (paragraph 4.66) and, even if they could, switching to an air source heat pump would, in this scenario, likely increase their heating costs (Source Sutherland tables). This would force many more into fuel poverty with associated risks.

**3: Do you agree with the set of strategic inferences we have drawn up?**

The framework must be clear, considering all options (including Bio/Liquid Fuels), supported by incentives the can help the consumer understand aims of low carbon energy and to make the right decision when required.

## Policy Framework 6.6.8

***a: Do you agree that we have identified the most important issues to be addressed as we develop our thinking? Do you consider that there are important omissions?***

**NO**, Liquid Fuels should be considered as part of the framework.

The FPS understands the importance of Building Regs L and Energy Performance Certificates which are key moving this forward. Trade associations like OFTEC and FPS should have an input into this revision

Promoting innovation and investigate can only happen once a clear pathway and direction is given.

***b: Do you have any comments on the types of actions identified to meet these challenges? Do you have other suggestions?***

Question 2: 4.1.7.9 identifies successful trials using low carbon liquid fuel alternative.

The FPS would like to see liquid fuels included, this would then be to the advantage for those urban/rural areas when considering low cost carbon heating options.

UKPIA has recently published: The Economic Contribution of the UK Downstream Oil Sector, produced in conjunction with Oxford Economics, this refers to energy transition: <https://www.oxfordeconomics.com/recent-releases/economic-contribution-of-the-UK-downstream-oil-sector>

- More efficient, reducing environmental Impact
- Development clean fuel from new source (Biogas, Biofuel from algae, Jet fuels from waste)
- Diversifying into new products

***c: Do you have views on which parties are best placed to deliver actions to address the key issues?***

Trade associations relevant to the industry sector, (working clearly with key government departments) can help create a pathway that works for government and consumer.

***d: Do you have any views on priorities for further development and proving of emerging technologies with clear potential to provide strategically important options and benefits in relation to decarbonising heating? Please provide supporting argument for your views?***

The recent UPKIA report on feedstocks highlights various new options moving forward and investment in E-fuels/liquid fuels can be a direct replacement to fossil fuels.

Infrastructure and transportations requirements are already in operation and can be converted without major impact or expenditure.

***e: Do you have views on how co-ordination and prioritisation of relevant initiatives across industry, academia and the public sector could be improved?***

Clear direction by Government with supporting framework will assist in this goal alongside continued industry/government interaction (which has recently been reduced).

***f: Do you have views on ways in which the Government, and other actors, could seek to engage stakeholders and stimulate a wider debate?***

We would like Government to look at adopting best practice for the use of bio/liquid fuels for heating.

The FPS believe that our members can play a major part in promoting and engaging consumers in low carbon liquid fuel.

***g: Are there practicable ways in which we could facilitate greater transparency in the exchange of views and analysis on relevant issues?***

The FPS would be more than happy to discuss further.

As the provider of the cheapest major alternative fuel to mains gas as stated earlier, the liquid fuels heating industry has an excellent track record in delivering a cost – effective and reliable solution for off-grid homes. In order to enable off – grid households to join the energy transition, consumer must remain free to choose which sources they want to use for generating heat.

Although we cannot currently estimate the cost of low carbon liquid fuels, we are confident that, as the market develops and the supply chain increases, running costs will be highly competitive with other options.

Technical innovation with the next generation of liquid fuel boilers will offer better fuel economy and low emissions.



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