Sustainable heating for your home –
b) liquid fuel replacements

Sustainable heating has a number of technological solutions, which will not all be of equal interest to every householder. This factsheet part deals specifically with potential replacements for fossil-based heating fuel oil.
Other parts are:

a) Introduction to current and developing technologies
c) Log-gasification and wood pellet boilers
d) Heat pumps
e) Electric boilers and electric heating

❖ Liquid fuel replacements

- OFTEC, the Tank Storage Association and the UK and Ireland Fuel Distributors Association have developed a '*Supply Chain Strategy for Liquid Fuels*' and are lobbying for formal adoption by the government.
- The strategy notes that 1.5 million homes in the UK are off the gas grid and rely on fossil fuel heating oil. Compared to properties on the gas grid, oil heated homes are much more diverse in character, age, design and construction and collectively pose a unique and difficult decarbonisation challenge.
    - 97% of oil heated homes in Great Britain are energy inefficient (EPC Band D - G)
    - 46% were built pre-1919 with hard to insulate solid walls
    - 51% are detached and typically larger than average
    - Many have valued period features or planning constraints.
- OFTEC are advocating for replacement liquid fuels to be part of the solution to achieve net zero, stating that the government's plan for large scale electrification appears unrealistic. This is due to high installation and running costs for electric heating, as well as the need for additional substantial investment in power generation and the distribution infrastructure.
- Potentially, low-carbon liquid fuels offer the highest carbon reduction impact for the lowest cost and could be supplied through existing supply chains.

The Rural Community Energy Fund

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- The strategy proposals are:
    - By 2027, provide a 30% FAME (fatty acid methyl ester)/70% kerosene blend fuel suitable for use in existing oil-fired boilers. An industry-led field trial would be used to demonstrate the feasibility.
    - By 2035, provide a low-carbon (0% fossil-based) liquid fuel, probably Hydrotreated Vegetable Oil (HVO). This could be used in existing boilers with only minor modifications, such as replacement burners (a periodic maintenance requirement).
- HVO gives a 91% reduction in CO_2e emissions but is currently around £1/litre for home heating. Government subsidy is seen as the mechanism for making this a viable option in the future.
- The disadvantages associated with the use of biofuels include:
    - Use of agricultural land.
    - Need for pesticide and fertiliser inputs.
    - Damage to biodiversity and farmland ecosystems through growth of single crop types.

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