



What will fuel the farm vehicles of the future - Vision and Insight

These notes supplement the abstract recently submitted (in July 2022) – [Farm of the Future - Decarbonising Farm Vehicles and Future Fuels](#) by the Royal Agricultural Society of England (RASE) and ‘Innovation for Agriculture’ (IfA), to UEAA.

The **Farm of the Future Report** was published by the Royal Agriculture Society of England in March 2022. The report includes a technical paper titled **Decarbonising Farm Vehicles and Future Fuels**. RASE produced the report to highlight the technical challenges farmers face as part of the transition of the sector to Net Zero. The abstract submitted to UEAA is for this paper which can be found in the suite of Farm of the Future documents, see- www.rase.org.uk/reports.

The abstracted paper on Decarbonising Farm Vehicles and Future Fuels was produced with primary input from Dr Nick McCarthy and Keith Budden of Cenex, plus Jonathan Wheeler of Wheeler Woodhouse. It was drafted by Richard Gueterbock: richard@foodchains.co.uk, with input from other members of RASE’s editorial team, Mike Woollacott and Angela Bywater.

The aim of the Farm of the Future report was to indicate ways in which farmers, growers and land managers (as well as policy makers and other agri-food stakeholders) are able to respond effectively to the climate emergency, while reducing their emissions and playing a full part in meeting national Net Zero targets. The abstract submitted in July 2022 is focused on future fuel and powertrain systems rather than other topics addressed in the suite of documents.

The challenge involved is illustrated in this quote in the main report, contributed by Caroline Drummond (1963 – 2022 - the former CEO of LEAF - www.leaf.eco): *“We need ambition, leadership, belief and a practical, ‘can-do’ approach to change, not only looking to achieve Net Carbon Zero, but also to enrich our environment, habitats and nature whilst ensuring profitable businesses and an actively connected society. **Now is the time for change!**”*

RASE’s vision of how British agriculture should adapt to the climate emergency includes change in a number of areas, including improved land and resource management; bioenergy and renewables; low emission vehicles and fuels; and agri-tech innovation. The report included contributions from multiple authors and includes ‘enterprise journeys’ for key farm sectors.

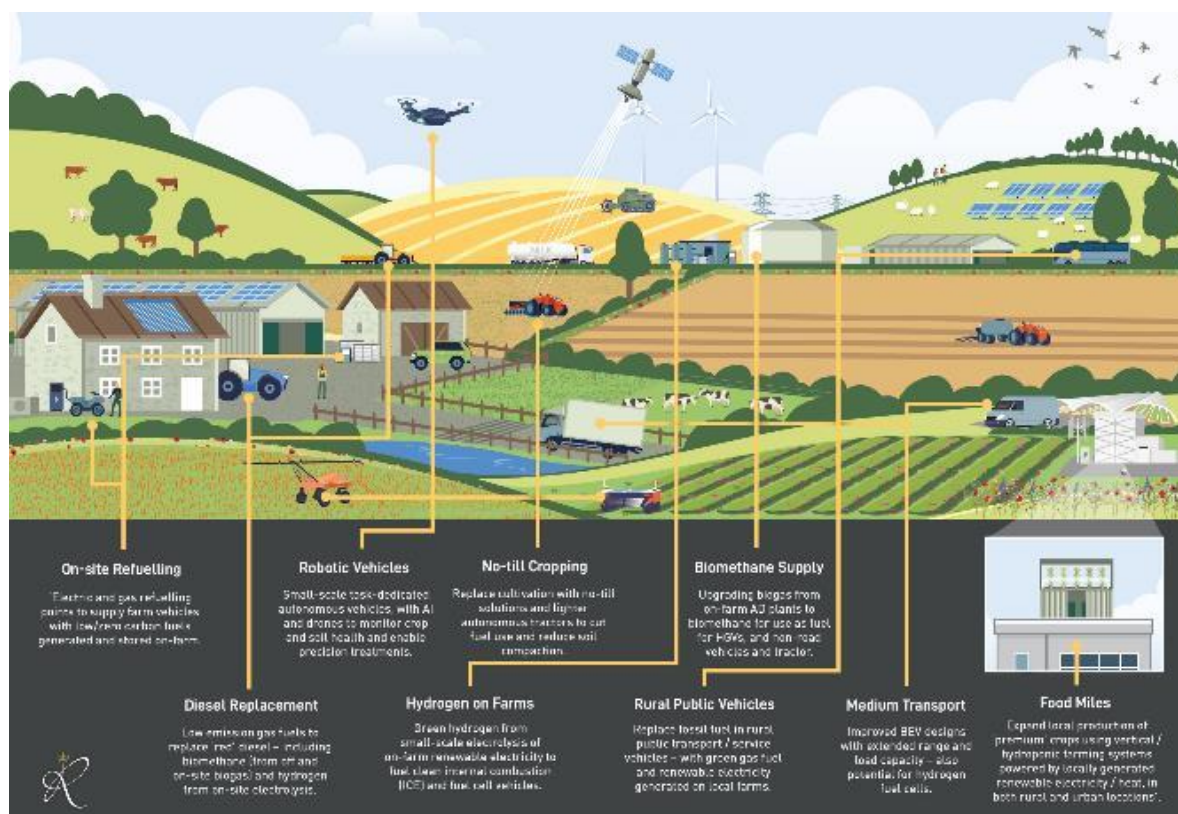
The report pulls together the latest science and on-farm innovation to show what farmers can do to decarbonise their activities, with a strong emphasis on better soil health. Farmers face the challenge of adopting new technologies and making fundamental adjustments to how they farm, at a time of major uncertainty and price volatility. Multiple case studies feature a range of businesses developing game-changing innovation to support industry decarbonisation.

Lord Deben, Chairman of the UK’s Climate Change Committee (CCC - www.theccc.org.uk) commented in the preface to the report, “*The Net bit of Net Zero is vitally important and crucially it’s largely in the hands of farmers,*” adding that farmers need help and direction if they are to shoulder this essential task. “*By 2050, fossil fuels will have no place on our farms, and to that end every year, serious reductions must be made.*”

Launching the report, RASE Chairman Philip Gready said: “*For this transformation to happen, farmers need practical guidance on their options, based on currently available or emerging technologies, along with independent advice and technology demonstration sites. To improve carbon capture, they need access to farm-level emissions accounting and benchmarking tools.*”

RASE report includes insights and case studies on soil and resource management; agri-tech innovation; bio-energy and renewables; and the change to low emission vehicles and fuels. The range of options is illustrated in the future vehicles infographic (figure 1 below), which is taken from the front cover of the Decarbonising Farm Vehicles and Future Fuels paper.

Figure 1 – Future Vehicles Infographic.



To support the transition, as farmers large and small, extensive or intensive, on prime land or on hill farms make changes to their farming operations they will need support from government bodies, research organisations and their supply-chain. The paper also highlights the need for independent advice and practical guidance on technology choices, including currently available or emerging fuels and future vehicle options, plus access to on-farm demonstration sites.