



## Zemo Partnership NEWS

17 January 2024

### **New study shows significant greenhouse gas savings can be made by switching to renewable fuels**

***Study models vehicle life cycle greenhouse gas (GHG) emissions across a range of vehicles, powertrains and fuel/energy pathways to inform future policy direction***

Low carbon, renewable fuels offer the immediate potential to cut road transport emissions as the sector transitions to zero emission technologies such as electric vehicles. To understand the real environmental impact of different fuel and vehicle options, a life cycle approach is needed. This new study from Zemo Partnership provides further evidence to show that renewable fuels can make a cost effective, immediate and significant contribution to meeting UK targets to cut greenhouse gas emissions on the pathway to net zero GHG.

The UK needs to cut GHG emissions from surface transport by almost 100 million tonnes by 2035<sup>1</sup>, extending to around 136 million tonnes by 2050. A portfolio of approaches will be needed to replace fossil fuels and deliver emissions reductions at the scale necessary within this timeframe.

The earlier emissions reductions are made, the greater their impact in terms of limiting climate heating. A range of renewable fuels are available to fleet and other users today and are a clear, practical option for hard-to-electrify applications such as long-distance haulage.

Renewable fuels are already reducing GHG emissions from all existing petrol and diesel vehicles. Such vehicles will continue to form a significant part of the UK vehicle parc for many years. Using renewable fuels in hybrid vehicles can also

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<sup>1</sup> Climate Change Committee 6th Carbon Budget

help to decarbonise applications for which a pure electric vehicle is currently unaffordable or unavailable, due to the power demand, vehicle range or recharging considerations.

Zemo analysis shows that in all vehicle segments modelled, renewable fuels offer significant GHG emissions savings when compared with conventional, predominantly fossil-content fuels. Some renewable fuels applications show greater life cycle GHG emissions savings than current battery electric vehicles using grid electricity, though rapid decarbonisation of UK power supplies will continue to shift the balance in favour of electrification over time.

The analysis shows that a one-size-fits-all approach to road vehicle applications is unlikely to be the optimal solution to road transport decarbonisation, at least in the short to medium-term.

The study authors recommend that transport policy and legislation should be more directly informed by vehicle life cycle GHG emissions data, and not focused solely on mitigating tailpipe emissions.

Organisations developing their fleet decarbonisation strategies should also consider vehicle life cycle GHG emissions. In some circumstances, renewable fuels can achieve greater GHG emissions savings for the available budget than battery electric vehicles.

Operators of electric vehicles should also consider the size and capacity of the batteries used in their vehicles and optimise these depending on the use case. Larger, heavier batteries offer improved vehicle range, but emit more GHG emissions during production, increase vehicle consumption and may also reduce payload capacity.

Report co-author and Zemo's Head of Sustainability, **Gloria Esposito**, said: "Zemo's study elegantly demonstrates the importance of life cycle GHG emission analysis in fairly comparing different powertrain technologies and renewable fuels against today's fossil fuel counterparts. Our work shows the significant contribution renewable fuels can continue to make towards reducing road transport GHG emissions. In particular, quick wins are available to the UK HGV fleet sector today.

"Transport policy has to rapidly evolve to embrace life cycle GHG emissions metrics. This is imperative to safeguard against unintended consequences and to enable a broader range of technology options to be recognised as viable candidates for decarbonising transport."

Join Zemo's **online webinar on 21st February 2024** at 14:00 to hear more about the study and the contribution that renewable, low carbon fuels can make to cutting emissions, if implemented soon and at scale. ([link](#)).

**Download the Vehicle Life Cycle GHG Emissions study** ([link](#)).



## NOTES TO EDITORS

The UK's Renewable Transport Fuel Obligation (RTFO) sets mandatory GHG emissions and sustainability standards for renewable fuel supply chains to qualify for fiscal rewards. The production of biofuels involving the cultivation of energy crops should not result in land use changes that cause deforestation, loss of biodiversity or removal of high value carbon vegetation. This ensures protection of sensitive ecosystems such as tropical forests, wetlands and peat land.

Zemo manages the **Renewable Fuels Assurance Scheme** ([link](#)) which independently verifies claims made by companies supplying renewable fuels to heavy duty vehicle operators regarding their product's life cycle GHG emission savings and feedstock sustainability. To date twenty seven biofuel fuel suppliers, and one renewable hydrogen supplier, are approved under the scheme. Biofuels supplied under the RFAS are achieving an average 75% life cycle GHG emission savings compared to fossil fuel, and entirely produced from biomass wastes and residues.

Related Zemo Partnership publications:

'Decarbonising Heavy Duty Vehicles and Machinery' (Nov 2022) ([link](#))

'Renewable Fuels Strategy Development' (Feb 2023) ([link](#))

'Renewable Fuels Guide' (July 2023) ([link](#))

Zemo Partnership ([www.zemo.org.uk](http://www.zemo.org.uk)) is a public-private partnership working to accelerate a sustainable shift to low carbon fuels and zero emission vehicles. Around 230 organisations are engaged from diverse backgrounds including automotive and fuel supply chains, vehicle users, academics, environment groups and others. Zemo Partnership runs a Fuels Working Group comprised of sixty organisations from across the renewable fuels value chain.

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