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HOW DOES BIODIESEL COMPARE TO OTHER RENEWABLE DIESEL FUELS?

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Focusing on heavy modes of transport such as trucks, trains, boats and barges, diesel fuel currently provides the majority of the “kick” that is needed to meet the demands of the modern standard of living in the developed world and the increasing demand of energy in the developing world.

Recently, diesel is facing a “backlash” after Volkswagen’s “diesel-gate”, which revealed the intentional manipulation of nitrogen oxides (NO_x) in official engine tests. The scandal hit at a time when air pollution is becoming an increasingly political issue for cities around the world. Some cities, including Paris, Mexico City and Madrid, have even announced bans for diesel vehicles from 2019 onwards.

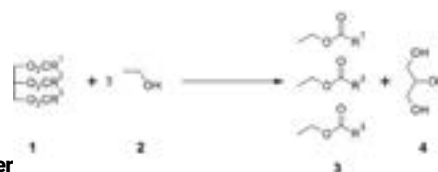
As air and sea traffic grow and as the developing world expands economically, the diesel engine will continue to play a key role in the transportation sector. Therefore, “de-fossilizing” this area of the transportation sector for the long-term will be necessary if the world’s governments are to meet temperature reduction targets set by the Paris Climate Agreement, as well as reduce the impact of anthropogenic climate change.

Although alternative, renewable fuels, also referred to as biofuels, for diesel engines can be derived from a wide range of bio-based feedstocks, their methods of production, vehicle use and benefits are distinctly different from each other.

The purpose of this presentation is to provide an informative background to renewable fuels available for the diesel engine in order to inform key decision makers and people who are just curious to learn more about the role alternative diesel fuels will

play in the near future.

Included among the various alternative diesel fuel options that will be discussed are: biodiesel, renewable diesel and dimethyl ether (DME), which offer substantially improved emission reductions compared to petro-diesel while retaining most fuel economy.



Transester

Triglyceride (1) contains three separate ester functional groups and can react with three molecules of methanol (2) to form three methyl esters (3) and glycerol (4)

Biography

Michael Eggleston is an aspiring policy analyst studying interdisciplinary & intercultural communication with the University of Rhode Island's International Engineering Program. He is spending a semester abroad at the Technische Universität Darmstadt in Darmstadt, Germany and is reporting at international conferences surrounding Europe's energy transition.

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