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Biofuels Session Lecture – K S Sutherland

Abstract

Biofuels – the reality behind the hype

What are biofuels? – seed oil based and sugar/starch fermentation based; not a direct use of solar power, but a secondary use of a product of solar energy

What is their purpose? – to provide a sustainable source of liquid fuels for mobile engines, when the fossil fuel sources dry up

The future need for liquid fuels – gas *vs* oil

The practicalities of their production – land requirements; food *vs* fuel; crops grown especially for fuel *vs* biomass residues from manufacturing or human wastes

Both main types are produced by modern versions of ancient processes, and both processes are important users of filtration or related separation technologies

Disadvantages – not carbon emission free (but closer to carbon neutral); fermentation products have lower energy content per liquid litre than gasoline; may not actually be sustainable (or may just be a minor component of future energy spectrum)

Liquid fuels alternatives – coal liquefaction; gas-to-liquids; Fischer-Tropsch

Is there really a future for biofuels?