Fuels of the Future: Biological LPG Initiative

Manchester Institute of Biotechnology spinout C3 Biotechnologies Ltd is the first company to license sustainable biological routes to Bio-LPG. LPG is a major domestic fuel, with lower toxicity and reduced greenhouse gas emissions compared to petrochemical fuels. Bio-propane will provide a clean high-value 'drop in' fuel that will help governments develop integrated fuels and energy policies with a low carbon burden, decrease domestic fuel contributions to air pollution and provide solutions to the multifaceted challenges of future energy supply. Microbial production enables cost-effective use of agricultural waste and a transitioning away from non-transportable, greenhouse gas intensive and lower calorific value fuels (e.g. methane/biogas). C3’s engineered microbial strains grow on widely available waste biomaterials under non-sterile conditions. C3’s technology has been developed as a low cost ‘bolt on’ to existing infrastructure (e.g. adapted anaerobic digestion (AD) plants) whereby waste biomass supplies the essential precursors for the growth of its microbial strains. Fuels generated from these microorganisms have low/zero carbon emission potential providing domestic and industrial routes to propane production. C3’s strategy is therefore to supply the ‘drop in’ market using existing production infrastructures. As vehicles transition to LPG, C3’s technology is poised to compete with existing fossil fuels and C3 is currently licensing to global manufacturers to provide routes to low carbon fuels.

How the Manchester Bio-Propane Team has Made a Difference

C3 engineered the first biological routes to gaseous hydrocarbon fuels. Its proprietary microbial strains work in the field at low capital cost (e.g. nonsterile environments using low cost materials). C3’s Bio-LPG production has low operating costs, conserves fresh water, uses a range of waste feedstocks, is scalable and enables continuous production with easy recovery of gaseous fuel. C3’s technology is a carbon neutral drop-in solution for BioLPG for transport and domestic heating/fuels. C3’s technologies routes to clean fuels will lead to reduction in carbon release and improvement in air quality supporting global initiatives to transition from petrochemical fuels. Scale up and licensing are now in operation with international partners.

http://c3biotechnologies.com