

# Next generation biofuels and commercialization outlook

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The ten alternatives are use of algae, air, chocolate, seawater, waste oil from restaurants, smuggled alcohol, coffee grounds, hemp, urine, and trash. But I think the use of algae as a biofuel among the alternatives is the most economical and practical alternative.

Academic research on the uses of algae started over 30 decades ago, and because of its growing importance, research activities are intensified over the years. To date, scientific studies are being done by over 200 universities worldwide on the feasibility of using algae as a substitute. (Algae. com)

Research showed that algae could easily meet the demands for 31 million crude oil. Algae is grown on many ocean floors in the United States. In contrast to corn, sugar soy and sunflower used as biofuels, algae do not need much caring to grow (view attached picture of a non-forested area of an algae farm). It does not require clearing of rainforests, fertile farmland or freshwater to grow. As compared to other feedstocks, algae produce more gallons per acre than soya, rapeseed, mustard, and palm. Algae produces 10,000 US gallons per acre, soya- 45 gal; Rapeseed - 110-145 us gal; palm oil -650 US gal. (Thurmond, Will. 2009) He claims that algae alone can meet the requirements as a possible substitute for entire global fossil requirements. Algae can be used as biofuel, ethanol, methane, jet fuel and a lot more. Thus, algae provide a wide opportunity for investment.

Due to its practicability, 32 countries worldwide serve as collection centers, while 70 companies are involved in energy commercial research. Algae has market potential because the US and EU cannot produce enough corn and meet targets while research showed algae has enough capabilities to meet these demands. As potential targets, algae can serve the military that is the

number 1 consumer of diesel fuel. Algae biofuel can also serve passenger cars that use gasoline and diesel. Algae production hopes to meet the target of Federal FRS36 billion gallons by 2022.

As of 2008, algae production capacity has only reached 250 million gallons, while the market capacity for the same year is 3, 300 million gallons. This clearly is a market opportunity that tends to increase yearly (Thurmond, Will).

Algae has a long way to go before it can replace gasoline, What is important here, are the efforts of the government with partnerships from the academe to look for sustainable solutions to reduce the country's dependence on oil.