

## Biofuel from Used Vegetable (Cooking) Oil

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Everyday people use cooking oil at home and various commercial establishments in the hospitality industry. Particularly hotels and restaurants are generating 0.1 million tons /year of waste cooking oil in India and other countries such as US (0.3-0.4 million tons), EU (0.7-1 million tons), United Kingdom (0.2 million tons), and Canada (0.135 million tons). However, most of the used vegetable oils are still regarded as waste materials and disposed of without any such adequate use, which leads to not only environmental pollution but also an enormous wastage. These used vegetable oils have capabilities to be a potential feedstock for production of bio fuel by transesterification reaction and consequently leads to low cost bio fuel production.

The objective of this study is to find an immediate alternative and sustainable energy solution from using waste vegetable oil for replacement of fossil fuel. The present article mainly deals with description of the continuous transesterification process along with optimization of the process parameters. Also it covers the advanced technology that is utilized for the generation of biofuel with design of portable biofuel generation plant with higher efficiency. This process would exhibit several advantages such as, (i) low temperature reaction (50-60°C), (ii) fast reaction with complete process taken less than an hour and (iii) high quality bio fuel and it meets EU standard.

