European waste-based biodiesel and glycerine markets
Agenda

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<th>Acronyms &amp; definitions</th>
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<tr>
<td><strong>UCO</strong>: Used Cooking Oil</td>
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<td><strong>UCOME</strong>: Used Cooking Oil Methyl Ester, biodiesel made from UCO</td>
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<td><strong>Tallow cat 1/2</strong>: Sterilized animal fat from slaughter house that is consider high risk for human/animal consumption</td>
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<td><strong>TME</strong>: Tallow Methyl Ester, biodiesel made from tallow cat1/2</td>
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<td><strong>DC</strong>: Double counting. A system promoting second-generation (from waste and residues) biofuels by assigning them double credit in the blending mandate</td>
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<td><strong>FFA</strong>: Free Fatty Acids or acids oils that can be used for biodiesel production</td>
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<td><strong>ISCC EU</strong>: Most well-known sustainability certification scheme used in Europe.</td>
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<td><strong>GHG saving</strong>: Green House Gas Saving value used to reach the mandate in Germany</td>
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There is a number of issues that the biodiesel market had to face in the last 18 months among which: high volatility of currency rates, drop of fossil energy prices against high veg-oil prices and a lack of market liquidity.

In Europe, the supply of biodiesel grew significantly between 2015 and 2016. Higher production means also an increased need for feedstock importation.

In the EU, producers require feedstock to be ISCC EU certified, which creates a market entry barrier. However, more and more Asian collectors and biodiesel producers get certified, which gives them an advantage over companies from other continents. In addition to the ISCC certification, biodiesel buyers request also GHG saving calculation, double counting schemes audit on a national level, for example for Holland, France.

Export of biodiesel to the European market is possible and there is demand for it, however, producers and exporters must fulfil a number of rules: ISCC certification, traceability, CO₂ emissions audit, company registration to the final user countries, sustainability requirements, etc.

New technologies and developments allow for the use of new types of feedstock which are cheaper due to their high acidity.
European biodiesel market is estimated at 14 million tonnes
Waste-based biodiesel production & capacity est. for 2016

Source: GREENEA analysis
In Europe, supply and demand of biodiesel remain balanced

- Low demand on the European biodiesel market caused oversupply and low market liquidity.

- Low demand on the biodiesel market in Europe is partly due to a low blending rate of 5%.

- Implementation of higher blending targets could positively influence the demand. However, with the Double Counting system in place, it is predicted that many producers will switch to waste-based biodiesel instead.

- Biodiesel market keeps developing in the waste-based sector. Increased investment in technology improvements, such as distillation columns or pre-treatment units, is visible all over the continent.

TME production in Europe will have to face feedstock supply difficulties in the coming years as the production of animal fat cat 1 is limited. Imports of UCOME will increase, especially from Asia, as we see new investments in UCOME production on the Asian market not only to export to Europe but also for their local market.

Source: GREENEA analysis
UK, Germany and Italy lead the demand for double-counting products

In 2016 the market is driven mainly by demand coming from Italy. The country is a strong supporter of DC material, especially TME and biodiesel from Fatty Acids.

Source: GREENEA analysis
The EU waste-based glycerin market is estimated at 258,000 MT and will keep increasing.

Development of the waste-based biodiesel production created a new source of glycerine in Europe. However, the quality is not uniform and may vary from batch to batch.

- **Glycerine from FFA**: 19 producers
- **Glycerine from animal fat cat 1 & 2**: 12 producers
- **Glycerine from UCO**: 25 producers

Source: GREENEA analysis
HVO development will have no impact on the glycerin production volumes

Even if biodiesel production continues to increase in Europe, the growth will come predominantly from the HVO sector. This will not increase the supply of glycerine to the European market. There is a possibility for a small growth of the waste-based biodiesel market, but nothing significant as Europe is reaching its production limits.

Source: GREENEA analysis
Prices of waste-based glycerine depend on quality which varies from producer to producer

Glycerine, which is a by-product of waste-based biodiesel production, does not have standard quality, however, in most cases the glycerol content is below 70%.

Source: GREENEA analysis
Opportunities and challenges for the glycerine market

“OPPORTUNITIES” FOR GLYCERINE BUYERS

- Increased production of waste-based glycerine in Europe that can be exported to Asia.

- Asia and the US also have an increased waste-based glycerine supply due to UCOME production emerging in China and constant production in Taiwan, Hong Kong and Korea.

- Waste-based glycerine producers are really open to try exporting to Asia as they are used to importing a lot of used cooking oil from overseas and Asia is their key market.

MAIN CHALLENGES FOR THE GLYCERINE MARKET

- HVO production is becoming increasingly popular and will lead the growth of the biofuels industry in the coming years. However, it implies no increase of the glycerine supply coming from the biodiesel industry in Europe.

- Moreover, the HVO development is not limited to Europe. There are several projects under development in the USA and Asia.

- The European biogas sector is booming in Europe, which could be a good output for the waste based glycerine suppliers.

- Waste-based glycerine producers are trying to improve their quality but the outcome is still far from the quality of veg-oil based product.

The veg-oil glycerine demand in Europe is anticipated to grow at 5.5% by 2022. Surging cosmetics demand in European countries such as Germany, France and England is expected to boost glycerol use as a moisturizer in skin care products.

Emerging applications as a chemical platform for renewable chemicals and biogas are expected to be critical for the development of the glycerol market over the next six years which should bring new demand for veg-oil and UCO based glycerine.
Why Greenea?

MARKET EXPERIENCE

GREENEA is an independent brokerage and consulting company founded in 2007. It specialises in waste-based raw materials and biofuels.

GREENEA offers its services to companies using raw materials in their production as well as to various other players from the oleo-chemical, animal feed, bioenergy and biofuels markets.

It was our conscious and strategic choice to position ourselves on the market of raw materials that do not compete with the food sector.

WIDE INTERNATIONAL PRESENCE

Since 2011 our average annual growth is 18%

We speak: English, Spanish, Portuguese, Polish, French and Italian

Our values:
honesty, integrity, respect for our clients and their values.
NEW ENERGY OPPORTUNITIES

Reevaluating the by-products

As brokers we cover a wide variety of waste-based products as well as industrial by-products, which can be reused and transformed into, for example, biofuel or bioenergy.

PRODUCTS GREENEA DEALS WITH

Player of circular economy

- Used cooking oil
- Biofuels (UCOME, TME, FAME)
- Wood pellets and woodchips
- Acid oil and glycerine
- Animal fats
- Crude glycerine

EXPERIENCE

8 years of experience on the markets of used cooking oil and waste-based biofuels such as UCOME & TME
Our business model accelerates your success

We continuously look for new trustworthy suppliers.

We can optimise our supply chain due to international sourcing.

We perfectly understand the quality of every type of product and their benefits.

We match buyers with sellers and carry out tailor-made monitoring of every deal.

We guarantee full confidentiality.

We provide everyday analysis of the market to offer transparent pricing.

We can also take care of the logistics.

We make sure that the deal is carried out in the most convenient and efficient way.

We help our clients develop their strategy towards new markets.

We aim at establishing long-term relationships with our clients.
Your Partner for sourcing **glycerine** in Europe

Your Partner for selling **biodiesel, used cooking oil, acids oils, palm oil and POME** to Europe
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