

# Pricing of UCO, Animal Fat and Waste-Based Biofuel: an Achilles Heel of this Market

*As non-listed commodities, waste-based biofuels and feedstock used in their production are difficult to price. Operators must take many factors into consideration in order to establish reliable pricing system. Difficult to set up and even more tricky to explain, the pricing model of two main types of biodiesel continuously poses new challenges to the biofuels industry.*

## One parcel, one quality

Unlike the main vegetable oils such as palm, soybean and rapeseed oils, no standard quality exists for Used Cooking Oil (UCO). Each parcel is different and the specifications depend mainly on the geographical origin and processing technique.

The key parameters that operators are looking at while buying feedstock for their biodiesel production are: FFA (Free Fatty Acids), MIU (Moisture, Impurities and Unsaponifiable), sulfur, phosphorus and iodine value. All these can be influenced by a number of factors which are difficult to control and make the pricing strategy even more tricky.

The level of FFA, expressed in %, will increase if the oil has been used many times, if it is old or if it has been in contact with water during transportation. Good quality UCO must have an FFA level at or below 5%. The iodine value, however, will depend on the origin of the UCO as it is determined by the kind of vegetable oil processed. In Europe UCO is mostly the product of processing sunflower/rapeseed oil and therefore has high iodine value. In South America it is rather based on soybean oil while South-East Asian UCO is mostly of palm oil origin, which makes the iodine value very low.

The level of iodine value will determine the typical Cold Filter Plugging Point (CFPP) of UCOME, which can change a lot from one parcel to another. The rule is: the higher the iodine value, the better. Typically, a good quality UCOME (Used Cooking Oil Methyl Ester) will not have a CFPP higher than 2°C. Therefore using UCO made mainly from palm oil is a bit risky during winter as it can be delivered solid if not heated properly.

Similarly, the quality of animal fats varies a lot from one parcel to another. Beside the categorization based on sanitary risks (from cat. 1 to cat.3), the conditions in which dead animals have been processed are key to determine the final quality of, especially, FFA and sulfur. Main factors taken into consideration here are the temperature and the time between death and processing. If the feedstock was processed quickly in a



cold or refrigerated environment, its final quality will be optimal.

Recently, UCOME and TME (Tallow Methyl Ester) producers have invested heavily into distillation system in order to be able to process feedstocks with high acidity. This investment is due to nothing but money: you can get high acidity product at lower prices, which constitutes a double advantage for them: it decreases their variable costs while significantly improving the availability of feedstock.

## The impact of transport mode

UCO's transport and type of delivery also constitute a key component of price that UCOME producers will carefully study. Sourced locally from a collector, the delivery will take place by tank truck of 25 mt. This varies a lot from vegetable oils delivery, which is generally handled by train tank of 1'000 mt. When producers' needs are bigger, they can buy the product in bulk from 2'500 to 4'000 mt. However, the price is generally much higher as it comes from a trader that aggregates quantities from smaller collectors. Moreover, UCO vessels for example from the US usually have a level of FFA higher than 5% (standard quality), preventing several biodiesel plants from processing it. Only biodiesel plants equipped with a column of distillation can process

feedstock containing more than 5% FFA and still reach a final product of high quality. The third option is to import UCO parcels from other countries or continents. UCOME producers are growingly forced to rely on imports in order to secure sufficient volumes of feedstock.

## Market dynamics locally

Unlike other commodities, the price of UCO and tallow will also depend on the dynamics of local supply and demand. In the EU countries, where a double-counting scheme for UCOME and TME is in place, local resources of UCO and animal fats tend to be more expensive than in countries with no incentives. To counter that, some UCOME producers set business models based on vertical integration, allowing them to secure margins more easily. However, the volume of UCO sourced internally covers their needs only partially as they run big production capacities.

UCOME producers usually secure their needs of UCO one to two months in advance. Then, depending on the market demand, they adjust their sourcing. Because UCOME prices have been in constant fall since early 2014, UCO purchases have been made this year at the very last moment. The market found it hard to adapt to this new buying behaviour. TME producers systematically negotiate

tallow prices at the end of each quarter, as historically animal fat producers have always been working this way.

In practice, the negotiation of price between UCO collectors (generally small-size companies) and UCOME producers is complicated. UCO collecting costs are not correlated to the veg-oils or gasoil markets that are influencing the biodiesel prices. Thus, they have a minimum breakeven price for their output that UCOME producers cannot pay when biodiesel markets are depressed. The TME producers are facing the same problem. When the bids for animal fat are too low, the rendering plants prefer to use the feedstock for burning purpose and it is difficult for them to secure quantities. The 2014 campaign illustrates very well this major hurdle for fair pricing. In early Q2, UCO collectors were not satisfied with the bids they received from buyers, who already faced degraded conditions on the UCOME market due to low FAME (Fatty Acid Methyl Ester) prices negotiated in ARA. With the hope of prices going up in Q3, when the demand usually reaches its highest level during the year, they built important inventories. Unfortunately for them, the FAME market continued to deteriorate and reached record lows in Q3. The whole situation was caused by weak vegetable oil prices. Risking the loss of liquidity, many of

the collectors have been forced to sell below their break-even.

### Double-counting is not always enough

Oil companies that face a blending obligation can rely, in several EU countries, on double-counting certificates issued from UCOME and TME cat.1 & 2. Although it constitutes a strong incentive for their use, it is sometimes insufficient. If the price of simple-counted FAME decreases sharply in a short period of time, like it has been the case in Q2 and Q3 2014, UCOME prices can quickly become too high and unattractive. Oil companies will have an incentive to blend UCOME only if its premium to gasoil stands below the double of the FAME premium to gasoil. UCOME prices therefore depend directly on FAME prices negotiated in ARA. Given the flat price of FAME depends on gasoil prices, those in turn have a strong impact on UCOME pricing. UCOME prices will then influence directly UCO prices, as UCOME producers will systematically look at securing their margins when they buy UCO parcels. The activity of UCO collectors is therefore closely linked to external and globalized markets.

The pricing of UCOME also depends on the evolution of the EUR/USD exchange rate, as it influences strongly both the price relation with FAME and the price of imported UCO. A

stronger EUR/USD rate means that the FAME premium moves higher, increasing the incentive for UCOME blending but signals that the price of UCO increases and pressurizes margins.

### UCOME market: a lack of reactivity

The experience of 2014 demonstrated that UCOME sellers find it hard to react to quick price moves in linked markets. The massive fall of FAME premium led to a degraded situation that UCOME sellers failed to address by working on a prompt basis. The reason was that they have been struggling with their negotiations with UCO collectors, who systematically refused to sell at lower prices... until they have been forced to.

The difference of pace between gasoil/FAME markets and UCOME/UCO ones constitutes a massive challenge for the whole UCOME supply chain. It also illustrates the complexity of OTC markets, which are characterized by a lack of transparency. In this regard, the role of brokers is to bring clear visibility on price discovery that is positive for the whole supply chain.

For further information please contact:  
[contact@greenea.com](mailto:contact@greenea.com)

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