The news revealed on “The Chemical Daily” described about the biodiesel production technology from RECYCLE ENERGY CO., LTD.

Here is the translation for the news.

Feb. 22nd, 2011

Technology of High Efficient Biodiesel Production Proved by RECYCLE ENERGY

Low Cost and No Glycerin as By-product Derived

RECYCLE ENERGY CO., LTD. (located in Fukuyama City, Hiroshima), as a venture corporation of environment management, has proved the technology to derive biodiesel with high efficiency from a variety of feedstock such as waste cooking oil and fat-contained biomass. The catalytic cracking production plant is expected to be on sale within year 2011. Advantages include less limitation on the ambient temperature due to the low pour point compared with the traditional method “transesterification process”, and no glycerin derived as the by-product. The wide-ranging feedstock and the fulfillment of lower costs will be the sales points during promotion.

A large-scale testing machine which can convert 150kg of the waste cooking oil per hour is to be completed around March. The company will pick up its pace to develop the best catalyst and to collect the necessary data. The plant to be on sale will be designed to process 100-400kg per hour. The yield is so far 70% (80% against the theoretical yield) and they are working on a better one. The derived biodiesel doesn’t have to blend with other fuels. The plant will be commercialized within this year and the targeting market is food manufacturer/dealers and collection traders of the waste cooking oil from home and abroad.

When it comes to biodiesel production, most people mix the waste cooking oil with methanol and after the chemical bond of ester derives fatty acid methyl ester, which is known as the transesterification process. There are many problems waiting to be solved concerning this kind of process. Firstly, the pour point of the biodiesel produced by this method is about 20 without any additive and only a limited region in north hemisphere is allowed to use it. Moreover, there is 25% of glycerin against the feedstock (per weight) as by-product. The derived methyl ester has to be refined and cleaning process is also indispensable.

On the other hand, the technology “catalytic cracking” that RECYCLE ENERGY proposes provides a solution to the above problems. By using the new technology, the pour point of the biodiesel is about -15, which allows less limitation on the region. It doesn’t require refinery or cleaning and this makes it possible to lower down the cost. The feedstock includes waste cooking oil, oil seeds such as sun flower and palm, animal fat, and non-edible vegetable oil such as jatropha.

Inquires about the plant have been coming from Japan, China, Korea, Malaysia and etc.. Additionally the company sees a high potentiality in India, where producing biodiesel from jatropha has been very prevailing.