ASB BIODIESEL (HONG KONG) LTD COMMENTS ON THE LEGISLATIVE PROPOSAL ON REGULATION OF EDIBLE FATS AND OILS AND RECYCLING OF "WASTE COOKING OILS", JULY 15.

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1 個附件檔

Notes for legislative proposals on regulation of edible oils rev05.pdf

Dear Sirs,

We appreciate your support improving the environmental and food safety performance of vegetable oils in Hong Kong.

Find attached our comments on the legislative proposal on regulation of edible facts and oils and recycling of "waste cooking oils", July 15.

Please don't hesitate to contact us for further clarification.

Regards,

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22nd of September 2015
BY EMAIL AND FAX

ASB BIODIESEL (HONG KONG) LTD COMMENTS ON THE LEGISLATIVE PROPOSAL ON REGULATION OF EDIBLE FATS AND OILS AND RECYCLING OF "WASTE COOKING OILS", JULY 15.

Waste definition and inclusion of animal waste

We consider that a broader scope should be considered in the Waste Disposal Ordinance (Cap. 354) modification to ensure that not only cooking oil but other catering waste and animal by-products not intended for human consumption which are a potential source of risks to public and animal health are disposed properly.

Europe regulates catering waste, including used cooking oil, together with other animal by-products. Commission Regulation (EU) No 142/2011, implementing Regulation (EC) No 1069/2009 defines catering waste as "all waste food including used cooking oil originating in restaurants, catering facilities and kitchens, including central kitchens and household kitchens."

Additionally, animal by-products are defined in Article 3 of Regulation (EC) 1069/2009 as "entire bodies or parts of animals, products of animal origin or other products obtained from animals that are not intended for human consumption". "Animal waste" is also defined of Section 2 Interpretation of the WDO, but with no specific requirements for disposal/processing methods or permitted use for resulting by-products from animal waste like inedible fat and meat-and-bone meal.

Only by considering the broader definition of catering waste and a comprehensive regulatory framework for both catering waste and animal by-products can the risks of cooking oil contamination and other food safety related issues be addressed. Wastes like former foodstuffs, butcher, wet market and slaughterhouse waste, blood, feathers, wool, hides and skins, fallen stock, pet animals, zoological center animals, manure, ova, embryos and semen not intended for breeding purposes should be under the scope of the WDO.

As a result, all waste from the points of origin of animal by-products and catering waste (including grease trap waste) should be regulated in Hong Kong, and its collection, storage, reprocessing, recycling, material recovery, deposit, destruction, discharge and disposal included in the legislative proposal. In the same way, collection

operations of segregated catering waste and waste animal by-products should also by licensed in the same way as waste cooking oil activities.

Collectors, disposer and importers and exporters

We understand that the definition of collectors, disposers, importers and exporters will be based on the provisions of the Waste Disposal Ordinance (Cap. 314). Specifically for the disposal, we refer to Section 20I of the WDO.

Section: 20I Interpretation and application

disposal" (處置), in relation to waste, means any transfer operation, storage, reprocessing, recycling, material recovery, deposit, destruction, discharge (whether into water or into a sewer or drain or otherwise) or burial (whether underground or otherwise), and "dispose of" shall be construed accordingly;

"disposer" (處置者), in relation to waste imported into Hong Kong, means the person who carries out the disposal of the waste, or reuses the waste, in the manner contemplated in the application for a permit for the import of the waste;

Waste cooking oil is currently exported in containers, using flexi-bags or ISO-tanks (tank containers). The consolidation of the waste oil, from the small recipients used in restaurants into a 20-25 metric ton container load (for efficient and safe transport) requires at least the following operations: tin/recipient unloading (transfer operation), storage of used cooking oil and truck/container loading (transfer operation). In almost all the cases, it also involves the physical decanting (with heat) to achieve the typical export quality requirements (3% maximum of moisture and impurities). We therefore understand that the exporter will be required to source from or operate an installation with a disposer license, and in the case of oil heating activities, and offensive trade license required by the FEHD. These requirements should be clear in the licensing conditions of the exporter.

Collector's license should only allow the transportation from the point of origin (restaurants, food factories) directly to the disposer (and not an exporter), without any transfer operation, storage, reprocessing, recycling, material recovery, deposit, destruction, discharge or burial of the waste. It should, therefore, be a requirement of the collectors to have, at the moment of the collection, a valid contract with a licensed disposer he/she will deliver the waste to. Licensing and inspections should ensure that the period of validity of such contracts is consistent with the collection records from the waste producer. The collector should be able to produce at least one contract with a disposer in the application of the license.

Ideally, the operation should be recorded in a waste transfer note, including in the same document the description of the waste, the quantity, the type of container, the producer, the collector and the disposer. Identical carbon copies should be produced by each of the parties involved.

Additionally, this transfer note covering all waste oils and fats could be a valid way of showing compliance (in terms of traceability and mass balance) with requirements of waste based biodiesel in government biodiesel tenders or other measures to promote a wider use of biodiesel in Hong Kong.

Grant of licenses: importers and exporters

Relevant Government Departments should implement an importing and exporting licensing scheme that ensures safe disposal but doesn't result in an undue burden on the trade:

- Approved licenses should be granted to a specific disposal facility and importer/exporter to cover a period of time (1 year) and a maximum quantity per year

- For each delivery, and automated procedure should be implemented to avoid unnecessary delays, demurrage and storage costs.

- Quantity of the performance bonds, if required, should take into account the design of the facilities involved, the traceability and quality systems implemented, and past record of the importer /exporter/disposal facility.

Restrictions of use of UCO and animal fat

In order to grant permits for disposers, exporters and importers, we understand that the EPD and the FEHD should clearly define the restrictions of use of catering waste (including waste cooking oil) and animal fats, noting that:

- Catering waste (including used cooking oil), contains products of animal origin that can be a vector for the spread of disease;
- Scientific advice suggests that the practice of feeding an animal species with proteins derived from the bodies, or parts of bodies, of the same species presents a risk of spreading disease.

In Europe, article 11 of Regulation (EC) 1069/2009 sets out restrictions on use relating to feeding of animal by-products and bans intra-species recycling (feeding material derived from species to a creature of the same species) and feeding of catering waste to farmed animals:

Article 11

Restrictions on use

1.The following uses of animal by-products and derived products shall be prohibited:

(a) the feeding of terrestrial animals of a given species other than fur animals with processed animal protein derived from the bodies or parts of bodies of animals of the same species;

(b) the feeding of farmed animals other than fur animals with catering waste or feed material containing or derived from catering waste;

(c) the feeding of farmed animals with herbage, either directly by grazing or by feeding with cut herbage, from land to which organic fertilisers or soil improvers, other than manure, have been applied unless the cutting or grazing takes place after the expiry of a waiting period which ensures adequate control of risks to public and animal health and is at least 21 days; and

(d) the feeding of farmed fish with processed animal protein derived from the bodies or parts of bodies of farmed fish of the same species.

Therefore:

- Catering waste use for the feeding of farmed animals other than fur animals should be banned in Hong Kong. Export licenses should not be granted for this use.
- The practice of feeding an animal species with proteins derived from the bodies, or parts of bodies, of the same species should be prohibited also in Hong Kong.

Proper segregated animal by-products could be used to feed other animal species only if it is free from Specified Risk Material (those parts of an animal considered most likely to harbour a disease such as BSE, e.g. bovine spinal cord), and proper internationally recognized standard processing methods are used (as, for example those defined in Annex IV, Chapter III, of the Commission Regulation (EU) No 142/2011).

Regarding the segregation of animal by-products, as early as 2002 European regulation introduced rules for this purpose, creating a system of categories depending on the level of risk. This avoided the disposal of all animal by-products that would have led to higher costs. Indeed, a wide range of animal by-products may be used in important productive sectors, such as pharmaceutical, feed and leather industries. But, in our view, Hong Kong's farming sector's size is not big enough and production of waste too disperse to introduce a complex system of categorization and segregated processing required to manage the associated human and animal risks.

It is therefore our opinion that all animal by-products should be collected, transported and identified without undue delay and should be processed as Category 1 equivalent:

(a) directly disposed of as waste by incineration in an incineration plant

(b) processed in a processing plant approved by the FEHD/EPD (offensive trade license) in which case the resulting material should be permanently marked, and finally disposed of as waste by incineration plant approved or modified into a valid end point like biodiesel (see next section).

Biodiesel as valid end point

European Regulation (EC) 1069/2009, Article 5, defines the concept of valid end point in the manufacturing for certain derived products (no longer subject to regulation):

End point in the manufacturing chain

Derived products referred to in Article 33 which have reached the stage of manufacturing regulated by the Community legislation referred to in that Article shall be regarded as having reached the end point in the manufacturing chain, beyond which they are no longer subject to the requirements of this Regulation.

[...]

Commission Regulation (EU) No 142/2011, in its Article 3, includes biodiesel as a valid end point for category 1 animal by-product, meaning they can be placed in the market without restrictions after treating any type of fat.

Article 3

End point in the manufacturing chain for certain derived products

The following derived products may be placed on the market, other than imported, without restrictions, as provided in Article 5(2) of Regulation (EC) No 1069/2009:

(a) biodiesel which fulfils the requirements for the disposal and use of derived products set out in point 2(b) of Section 3 of Chapter IV of Annex IV;

[...]

Biogas and composting processes

Biogas and composting should be considered valid processing methods for catering waste and animal by-products under certain conditions.

Valid processes whereby animal by-products and derived products are transformed into biogas and composted should comply with the health rules laid down in international regulations, like the ones established in the Commission Regulation (EU) No 142/2011.[1]

The disposal of digestion residues and compost (i.e. the residues resulting from the transformation of animal by-products) in a biogas plants should also be regulated, with the inclusion of appropriate standards. In particular, representative samples of the digestion residues or compost taken during or immediately after transformation at the biogas plant or composting at the composting plant in order to monitor the process should comply with standards for Escherichia coli, Enterococcaceae and Salmonella.

Digestion residues or compost, which do not comply with the requirements should be resubmitted to transformation or composting, and in the case of Salmonella handled or disposed of in accordance with the instructions of the competent authority.

Oil deterioration

We are of the opinion that the FEHD should develop a guideline for cooking oil use and end of life. We strongly recommend that this guideline should not rely exclusively on sensory evaluation (darkening, smoke, foaming, thickening, rancid taste or unpleasant smell when heating), current practice in Hong Kong and totally unreliable.

Rapid methods have been developed to measure oil quality based either on its chemical properties such as free fatty acids, iodine value, carbonyl value and the content of total polar compounds, or on its physical characteristics such as oil color, viscosity and dielectric constant.[2]

The content of total polar compounds and acid value are the most predominant indicators for oil quality and are widely used in many international regulations. The proposed guideline may consider the recommendation to use the following tests, available with sufficient accuracy for restaurant and industry use:

- Testing strips: used by dipping a strip into the oil and checking the colour change of certain strips to measure the content of free fatty acids;[3]
- Total polar material/compounds testers: Instruments that indicate total polar compounds, providing a robust measurement on the extent of deterioration in most situations.[4]

For public health concerns, the content of total polar compounds and acid value in frying oil are regulated at not more than 25% and 2.0 mg KOH/g, respectively, in Taiwan. Many European countries have also set regulations on end of frying life (and hence when it has to be discarded), limiting maximum frying temperature, smoke point, free fatty acids (acid value), polar compounds, oxidized fatty acids, dimers and polymers and viscosity. The range is given below[5]:

- Max frying temperature (^{0}C) 180
- Smoke point (min ^{0}C): 170
- Acid value (mg KOH/g): 2 to 2.5
- Polar compounds (max %): 27-24

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1 Article 10, Requirements regarding the transformation of animal by-products and derived products into biogas and composting, including the standard transformation parameters set out in Section 1 of Chapter III

2 Total Polar Compounds and Acid Values of Repeatedly Used Frying Oils Measured by Standard and Rapid Methods, Journal of Food and Drug Analysis, Vol. 21, No. 1, 2013, Pages 58-65, WEI-AN CHEN, CHIHWEI P. CHIU, WEI-CHIH CHENG, CHAO-KAI HSU AND MENG-I KUO1.

3 Example: 3M Shortening Monitor (3M, USA)

4 Example: Food Oil Monitor 310 (FOM 310, Ebro Inc., Germany) and the Testo 270 Deep-frying Oil Tester (Testo Inc., Germany)

5 From table 3.3 Regulations on end of frying life, in *Regulation in the European Union* by R. Fox, Pura Foods Limited, Belvedere compiled in *Frying , Improving quality*, Edited by J.B. Rossell, CRC Press

- Oxidized fatty acids (max %) 0.7-1%
- Dimers and polymers (max %): 25
- Viscosity 50 °C: (max mPa s): 37

Benzo (a) pyrene

The European commission, through the European Regulation (EC) No. 1881/2006 of 19 December 2006 setting maximum levels of certain contaminants in foodstuffs limits Benzo [a] pyrene to less than 2ppb for oils and fats intended for direct human consumption or used as ingredient in food[6]. This is correctly reflected in the table of page 35 of the consultation paper. But section 4.21 states, in its last paragraph referring to B[a]P, that "[...] about 5% and 9%of the samples exceed 5 µg/kg and 2 µg/kg i.e. EU and Korean standards respectively". This is obviously incorrect, as both standards are 2 µg/kg.

It is of concern that 9% of the oil samples in Hong Kong do not meet international regulatory limits for this mutagenic and highly carcinogenic hydrocarbon. The fact that both Korea and the EU can enforce a limit of 2 µg/kg does not support that the ALARP (as low as reasonably practicable) principle is being followed when proposing 5 µg/kg in the consultation paper. Margins of exposure over 10,000 calculated in certain studies for concentrations up to 17 µg/kg [7] found in Hong Kong in 2012 only consider the dose resulting from vegetable oil consumption and does not include other sources of B[a]P (including the increase of B[a]P in the cooking process, specially deep frying, very common in Hong Kong). The actual MOE could eventually be "of concern".

Promotion of local biodiesel

Active polices to incentivize biodiesel blends in Hong Kong would promote local conversion of used cooking oil and animal fats, ensuring maximum environmental and food safety guarantee (full control of the supply chain by HKSAR Departments) and optimal carbon footprint reduction (minimization of logistic energy inputs). It will also improve Hong Kong's energy security and economic development and reduce roadside air pollution.

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[6] Section 6: Polycyclic aromatic hydrocarbons, COMMISSION REGULATION (EC) No 1881/2006 of 19 December 2006 setting maximum levels for certain contaminants in foodstuffs

[77] Risk assessment and risk management in action: case study – Benzo [a] pyrene in Cooking Oil, Dr. Chow chor-yiu, Head, Risk Assessment section, Centre for Food Safety, Hong Kong http://www.fao.org/fileadmin/templates/rap/files/meetings/2013/130617_5.3.pdf