40/F, Revenue Tower, 5 Gloucester Road, Wan Chai, Hong Kong
香港灣仔告士打道5號稅務大樓40樓

ACE-EIA Paper 3/2009
For advice

Environmental Impact Assessment Ordinance (Cap. 499)
Environmental Impact Assessment Report
Development of a Biodiesel Plant at Tseung Kwan O Industrial Estate

PURPOSE

This paper presents the key findings and recommendations of the Environmental Impact Assessment (EIA) report for the Development of a Biodiesel Plant at Tseung Kwan O Industrial Estate (hereafter known as the Project), submitted under section 6(2) of the Environmental Impact Assessment Ordinance (EIAO) with the application No.EIA-156/2008. ASB Biodiesel (Hong Kong) Limited (the applicant) and their consultants will make a presentation. Comments from the public and the Advisory Council on the Environment will be taken into account by the Director of Environmental Protection when she makes the decision on the approval of the EIA Report under the EIAO.

ADVICE SOUGHT

2. Members' views are sought on the findings and recommendations of the EIA report.

NEED FOR THE PROJECT

3. The project would offer a recycling outlet for waste cooking oil (WCO) and grease trap waste (GTW) by converting the oil and grease recovered into useful products including biodiesel, glycerine, fertilizer and bioheating oil.

DESCRIPTION OF THE PROJECT

4. The project is located within the Tseung Kwan O Industrial Estate (figure attached). It has a capacity of 100,000 tonnes per annum. In addition to WCO and GTW, it would use other feedstock like Palm Fatty Acid Distillate (PFAD) and animal fats to produce biodiesel and three useable by-products, namely glycerine, fertilizer, and bioheating oil. The Project also includes the following components:

(i) a GTW pre-treatment facility (with a designed treatment capacity of 200,000 tonnes per annum) to recover oil and grease from GTW;

(ii) a wastewater treatment plant (with a designed treatment capacity of 170,000 m^3 per annum) for the treatment of wastewaters generated from the GTW pre-treatment facility and the biodiesel production process;

(iii) storage and process tanks for the following materials : GTW, WCO, PFAD, animal fat, methanol, sulfuric acid, phosphoric acid, additives, biodiesel, glycerine, fertilizer, bioheating oil, gas oil and nitrogen.

5. The Project is classified as a designated project under

(i) Item K.6, Part I, Schedule 2 of the EIAO: *"A chemical or biochenmical plant with a storage capacity of more than 500 tonnes and in which substances are processed or produced"*;

(ii) Item K.13, Part I, Schedule 2 of the EIAO: *"A dangerous goods godown with a storage capacity exceeding 500 tonnes"*; and

(iii) Item L.4, Part I, Schedule 2 of the EIAO: *"A storage, transfer and trans-shipment of oil facility with a storage capacity of not less than 1,000 tonnes"*.

CONSIDERATION OF ALTERNATIVE OPTIONS

6. The EIA study considered various construction methods and operation arrangements (including materials for biodiesel processes, air abatement technology, wastewater management, materials transfer and on-site storage) for the project and adopted those suitable with a view to avoiding or minimizing adverse environmental impacts.

SPECIFIC ENVIRONMENT ASPECTS TO HIGHLIGHT

Hazard to Life

7. The project is not a Potentially Hazardous Installation. The EIA Study identified that principal hazards could arise from handling, processing and storage of the highly flammable methanol. Preventive measures including the provision of gas detectors, leak detection system, emergency ventilation and shutdown system would be incorporated into the design and operation of the project to avoid and minimize the potential hazard. In particular, emergency ventilation system would be provided to the process areas inside building, so as to ensure that the ventilation system would adequately bring down the air quality concentration therein to below the lower explosive limit. Quantitative Risk Assessments were also carried out to confirm that both the individual and societal risks from the project would be within the acceptable region stipulated in the Technical Memorandum on Environmental Impact Assessment Process (TM).

8. Mitigation measures recommended in the EIA Study will also be audited to ensure that they would be properly incorporated into the design of the project and properly installed and implemented.

Air Quality

9. The boiler, biogas stacks and the exhaust of the Process Building are the major emission sources associated with the operation of the project. The predicted air quality levels are within the criteria of the TM.

10. Potential odour sources associated with the handling of GTW and biodiesel process would be enclosed and exhaust air from the enclosure would be treated by an air scrubbing system. The scrubbed exhaust air would be diverted to the on-site wastewater treatment plant as part of the air intake for the aeration process and for ventilation of the enclosed wastewater treatment tanks. The exhaust air from the wastewater storage and treatment tanks would in turn be cleaned by the final air scrubber prior to discharge to the atmosphere. With the above measures, the predicted odour levels are within the criteria of the TM.

Noise Impact

11. The closest noise sensitive receiver is located at more than 800 m from the project. The predicted noise levels are within the criteria of the TM.

Water Quality and Ecological Impact

12. The construction works for the project would mainly be land-based, except for the construction of a jetty which would affect the existing seawall. Two jetty construction methods (i.e. vertical seawall and piled deck jetty) were considered and the EIA Study recommended piled deck jetty for the purpose of minimizing the environmental impact. Dredging and reclamation works would not be required. The recommended jetty construction method would affect 48 m^2 of the artificial seawall where the piles would be placed. After the jetty is constructed, pile surfaces could serve as artificial habitats for settlement and recolonisation of marine organisms. Hence, adverse ecological impact is not anticipated.

13. Based on the EIA Study, the tank farm area would be bunded to contain any spillage or leakage of materials from the storage tanks. Contaminated water collected from the bunded area and any wastewater from the project would be diverted to the on-site wastewater treatment plant for treatment. With the mitigation measures recommended in the EIA Study, adverse water quality impact is not anticipated.

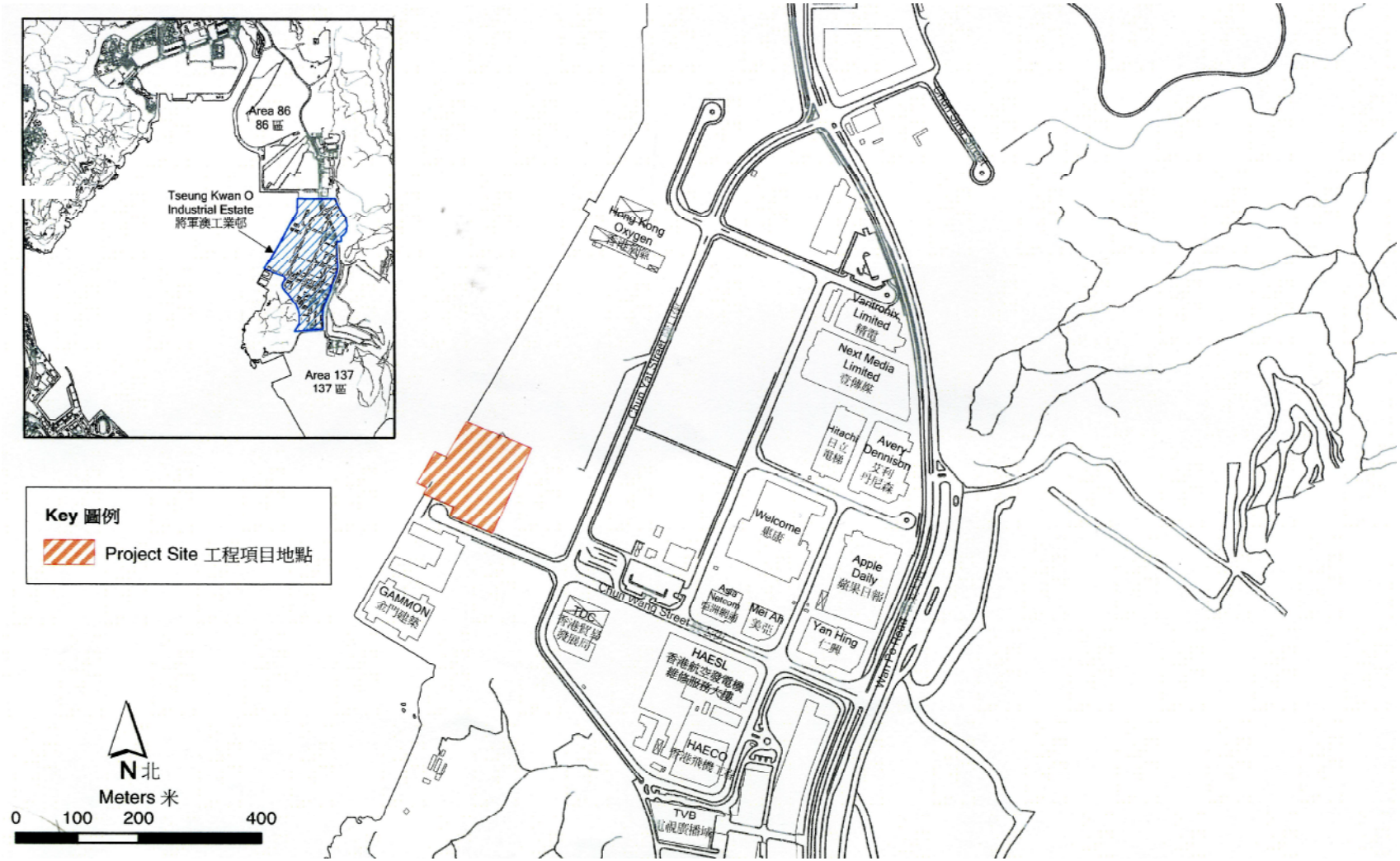
ENVIRONMENTAL MONITORING AND AUDIT

14. The EIA report recommends an Environmental Monitoring and Audit programme during the design and operation phase of the Project.

PUBLIC CONSULTATION

15. The applicant has made the EIA report and Executive Summary available for the public to comment under the EIAO from 17 December 2008 to 15 January 2009. Members will be briefed on any public comments received at the meeting.

December 2008
Environmental Assessment Division
Environmental Protection Department



Project Title: Development of a Biodiesel Plant at Tseung Kwan O Industrial Estate

Figure : Location Plan (Reproduced from Figure 2.2a of the EIA Report)