Confirmed Minutes of the 95th Meeting of the Environmental Impact Assessment Subcommittee of the Advisory Council on the Environment held on 5 September 2006 at 10:00 am

Present:

Dr NG Cho-nam, BBS (Chairman)
Prof POON Chi-sun
Mrs Mei NG, BBS
Mr TSANG Kam-lam
Ms Josephine CHEUNG (Secretary)

Absent with Apologies:

Prof HO Kin-chung, BBS (Deputy Chairman)
Mr Peter Y C LEE
Prof Paul LAM

In Attendance:

Mr Elvis AU	Assistant Director (Environmental Assessment), Environmental Protection Department (EPD)
Mr C C LAY	Assistant Director (Conservation), Agriculture, Fisheries and Conservation Department (AFCD)
Miss Sarah NG	Executive Officer (CBD), EPD

In Attendance for Agenda Item 4:

Mr David CRIGHTON	Director, Generation, CLP Power
Mr Rick MORSE	Head of Environment Strategy and Development, CLP Power
Mr Tom BROWN	Deputy Project Director, CLP Power
Mr David YIP	Package Manager, CLP Power
Ms Winifred WONG	Project Communications Manager, CLP Power
Mr David HO	Technical Director, ExxonMobil Energy Ltd
Mr Raymond CHEUNG	Senior Technical Advisor, ExxonMobil Energy Ltd
Ms Rebecca LUK	Business Strategy & Regulatory Manager, ExxonMobil Energy Ltd
Dr Andrew JACKSON	Managing Director, ERM-Hong Kong, Ltd
Mr Freeman CHEUNG	Executive Director, ERM-Hong Kong, Ltd
Mr Marcus IP	Principal Consultant, ERM-Hong Kong, Ltd

Mr WONG Hon-meng	Principal Environmental Protection Officer (Strategic Assessment), EPD
Mr Lawrence NGO	Senior Environmental Protection Officer (Strategic Assessment)2, EPD

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Action

Agenda Item 1: Confirmation of Minutes of the 94th Meeting held on 24 October 2005

The Chairman informed Members that the draft minutes of the 94th meeting had been circulated to Members in May 2006. Members had confirmed the draft minutes by circulation.

Agenda Item 2: Matters Arising

2. There were no matters arising from the minutes of the last meeting.

Agenda Item 3: Environmental Impact Assessment Report on Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvement, Stage 1, Phase 2B – Kam Tin, Secondary Drainage Channel KT13
(ACE-EIA Paper 1/2006)

3. The Chairman said that Members noted that a set of public comments on the EIA report was received by the Environmental Protection Department (EPD) which expressed concerns about the Mikania colonization, Riparian vegetation, stream bed substratum and maintenance of the new channels. Members shared the concerns and requested the project proponent, Drainage Services Department, to provide response to the comments before the meeting. Having regard to the findings and recommendations of the Environmental Impact Assessment (EIA) report and information provided by the project proponent, Members agreed by circulation that the EIA report could be endorsed without condition and that a presentation by the project proponent was not necessary.

4. The meeting agreed to recommend the EIA report to the full Council for endorsement without condition and also recommend EPD to monitor the commitments undertaken by the project proponent in their response in the context of the Environmental Monitoring and Audit process.

Action

Agenda Item 4: Environmental Impact Assessment Report on Emissions Control Project at the Castle Peak Power Station "B" Units ***(ACE-EIA Paper 2/2006)***

Internal discussion

5. Members noted that the project was proposed by the project proponent, Castle Peak Power Company Limited (CAPCO), in response to the Hong Kong SAR Government's emission reduction initiatives which involved installation of additional emission control facilities on the Castle Peak Power Station "B" units to further reduce air emissions from the operations of the units. Members welcomed the project as it aimed at improving the environmental performance of the operation of power generation facilities. They agreed that it was necessary to assess the environmental impacts of the proposed project from the EIA perspective. Members noted that no public comments were received by EPD up to the date of the meeting and agreed to focus the discussion mainly on the consideration of alternative emission control technologies, procurement strategy, design and performance, wastewater treatment, waste management, land contamination and extension of berthing facilities.

Presentation

6. Mr David Crighton introduced the background, purpose and scope of the project. Dr Andrew Jackson briefed Members on the findings of the EIA study.

Consideration of alternative emission control technologies

7. Upon a Member's enquiry about the consideration of alternative emission control technologies, Dr Andrew Jackson explained that they had conducted comparative studies on a wide range of emission control technology options as contained in section 2 of the EIA report. Having regard to expected environmental benefits, potential environmental impacts, technological feasibility, procurement strategy of raw materials, plant design and relevant international standards, the Limestone Forced Oxidation Flue Gas Desulphurisation (LS-FGD) for SO_2 reduction and Selective Catalytic Reduction (SCR) for NO_x reduction were selected as the package of emission control options for the purpose of the EIA Study. Lifecycle analysis had been conducted in assessing different emission control options.

Action

Procurement strategy

8. In reply to a Member's enquiry about the procurement strategy of raw materials, Mr David Crighton explained that they had conducted detailed studies on the sources of supply. Coal and limestone were sourced from a wide range of international markets, by long-term and spot purchase contracts, for high quality supplies in terms of environmental benefits. The emissions control project was designed to handle the typical international export coal quality as with the original boiler design. In response to another Member's enquiry, Mr Crighton assured Members that the coal specifications would not be worse than the current specifications stipulated in the Air Pollution Control Licence for Castle Peak Power Station after installing the retrofitting facilities. The supply of high quality limestone would be important to ensure the quality of commercial-grade gypsum by-product.

Design and performance

9. In reply to the Chairman's enquiry on the expected operating life of the Castle Peak Power Plant, Mr David Crighton said that the Plant had been operated for about 25 years. Based on a detailed life assessment study conducted, the remaining operating life of the plant was expected to be another 25 years in broad terms.

10. A Member enquired about the anticipated impact of the retrofitting project on the territory-wide air quality. Mr David Crighton said that air pollution in Hong Kong was a regional problem but they recognized that they had a significant role to play in reducing emissions in Hong Kong. While CAPCO contributed only about 5% of the total pollutants in the region, a high environmental performance standard for the power generation facilities was set by using the best available technologies to further reduce air emissions from the operation. This would enable Castle Peak Power Plant to be one of the best performing and leading coal-fired power plants in terms of environmental performance in the region. Dr Andrew Jackson said that Table A.4 in the EIA report showed the significant emission reductions of SO_2 (86 to 91%), NO_x (72 to 83%) and particulate concentrations (44 to 66%) and hence air quality improvements at a large number of air-sensitive receivers in the study area under the worst-case concentration ratios measured in the wind tunnel.

11. A Member asked whether the removal efficiency of SO_2 and NO_x could be further increased beyond the target levels. Mr David Crighton

explained that the target levels of 90% for SO_2 and 80% for NO_x were very high in terms of international standards. They had to strike a balance on the removal efficiency of SO_2 and NO_x and the amount of limestone and ammonia to be added in the process which would produce the by-product of gypsum and possibility of ammonia slip respectively. In reply to the Chairman's enquiry, Mr Crighton said that the anticipated removal rates of SO_2 and NO_x were based on the standard of the design coals for the Castle Peak Power Plant.

12. A Member expressed concern about the possible ammonia slip during the SCR process for NO_x reduction due to excess unreacted ammonia making its way to the flue gas. Mr David Crighton explained that in the process of removing about 80% of NO_x, the level of potential ammonia emissions would be very low. However, if the reduction level of NO_x were to be pushed beyond 80%, there might be a phenomenon of over-injection of ammonia, thereby increasing the chance of ammonia slip. Dr Andrew Jackson said that the monitoring and control measures for ammonia slip were carefully considered as elaborated in section 3.5.2 of the EIA report.

Wastewater treatment

13. A Member said that there was information on the characteristics of treated effluents from the LS-FGD Wastewater Treatment System in the EIA report. However, he was not aware of any information on the characteristics of influents before treatment, justifications for the proposed wastewater treatment methods and characteristics of the sludge from the Wastewater Treatment System. Mr David Crighton explained that the output of the LS-FGD process was mainly gypsum in solid form and the amount of effluent was relatively small. The wastewater would be treated on site prior to discharge to comply with all requirements of relevant Technical Memorandum and environmental ordinances. Upon Members' request, Mr Crighton agreed to provide additional information.

Waste management

14. A Member said that about 240,000 tonnes of commercial-grade and 17,000 tonnes of lower-grade gypsum would be generated per year from the LS-FGD process and was concerned about the storage and outlets for the gypsum. Mr David Crighton explained that the LS-FGD was considered the best available technology from an environmental point of view as the by-product would be gypsum in solid

form which had marketable value with ready markets for plasterboard and cement manufacturing. Low sulphur content coal and high quality limestone would be sourced which would enable the generation of commercial-grade gypsum and minimization of lower-grade gypsum. They were actively liaising with potential buyers and were confident to find outlets for the gypsum. Stocks pending for sale, probably in the initial period of the operation for establishing the market, would be stored at the site within the plant. Temporary storage at the Tsang Tsui Ash Lagoon would only be a fallback. There was no intention to dispose the gypsum at the landfills.

15. A Member enquired about the licensing requirement for the temporary storage of gypsum at the Tsang Tsui Ash Lagoon. Mr Wong Hon-meng said that according to the EIA report, the storage at the Ash Lagoon would only be a contingency measure in case the storage within the plant was used up. He agreed to check the licensing requirement of the Ash Lagoon under EPD's control.

(Post-meeting note: EPD confirmed that no prior consent or specific licensing requirements under EPD's control was required for the fallback temporary storage of lower-grade gypsum in the Tsang Tsui Ash Lagoon. Nevertheless, the effluent discharge from the Ash Lagoon was subject to the control of the Water Pollution Control Ordinance (WPCO) and a discharge license under the WPCO had been issued to the Castle Peak Power Station. There would be a need for CAPCO to check in future if they needed to apply for variation of the discharge license.)

16. In response to a Member's enquiry about the level of oxidized mercury in the gypsum after the LS-FGD process, Mr David Crighton said that it was their objective to produce commercial-grade gypsum which could be sold in the market. With careful selection of low-mercury coal and high quality limestone, the level of oxidized mercury in the gypsum would be very low.

17. A Member enquired about the chemical composition of the lower-grade gypsum. Mr David Yip said that the lower-grade gypsum had similar chemical contents as commercial-grade gypsum. The major difference was that it had a lower calcium sulphate content than commercial-grade gypsum as there were very stringent specifications for commercial-grade gypsum. Upon Members' request, Mr David Crighton agreed to provide further information on the quality of both commercial-grade and lower-grade gypsum.

Action

Land contamination

18. A member said that the site investigation results indicated that there was small volume, about 50 m^3, of potentially contaminated soil (contaminated by Total Petroleum Hydrocarbon (TPH)) within the project site. He noted that all contaminated soil within the project site would be removed prior to start of construction and on-site treatment of contaminated soil adopting bioremediation was recommended in the EIA report. He noted with concern that the site investigation results also indicated contamination of groundwater with about 3,000 microgram/litre of TPH. However, no action was recommended for treatment of the contaminated groundwater bearing in mind that the plant was located near the sea.

19. Mr David Crighton explained that the groundwater contamination was identified by a contamination assessment study and the source was suspected to be related to some minor oil leakage in the power plant over the years. Dr Andrew Jackson said that the preferred remediation approach in handling similar situations in industrial sites would be the removal of the hydrocarbon-contaminated soil and the hydrocarbon content in the groundwater would be gradually decomposed by natural biological process over a period of about five to ten years. In terms of risk assessment on human health, groundwater would not be extracted for drinking use and guidelines would be set for construction workers in handling possible contaminated soil and groundwater. In the long run, ongoing monitoring measures would be taken to manage the site condition and ensure that it would not deteriorate.

20. Mr Wong Hon-meng said that the site investigation results showed that the groundwater contamination was associated with facilities outside the retrofitting project. The Chairman agreed that the contamination was due to sources outside the project boundary and the problem should be dealt with outside the scope of the present EIA report. Mr Elvis Au said that in the case of some other projects under which similar assessments based on risk-based approach were conducted, it might not be necessary to treat the contaminated groundwater because the Dutch levels were based on groundwater being extracted for domestic or related use. The Chairman suggested and Members agreed to recommend the full Council report the observation on the potential problem of groundwater contamination in the site identified through the EIA Study to EPD and recommend the project proponent to deal with the issue as an operational issue of the existing facilities in the power plant and liaise closely with EPD on plans to manage

Action

the situation. Mr David Crighton assured Members that CAPCO, being a responsible company, would take initiative and work closely with the consultants to look into the problem as revealed through the present EIA Study and would share the plans with EPD.

Extension of berthing facilities

21. A Member expressed concern about the extension of the berthing facilities which involved dredging. Mr David Crighton explained that the berthing facilities were extended to accommodate the need of loading and offloading of vessels to ensure quality limestone supply from and gypsum recycle to more distant locations in the international market throughout the remaining operating life of the power plant. With smaller scale berthing facilities, the limestone could only be sourced from nearby areas with lower-grade limestone which would limit the LS-FGD operation and generation of commercial-grade gypsum. Mr David Yip said that extensive studies had been conducted on the appropriate size of the berthing facilities for the coming 25 years to cater for marine vessels ranging from a few hundred tonnage to a few thousand tonnage and the proposed facilities were considered optimum.

Conclusion

22. Having regard to the findings and recommendations of the EIA report, the meeting agreed to recommend the report to the Council for endorsement without condition. The meeting also agreed to suggest the full Council report the observation on the potential problem of groundwater contamination in the site identified through the EIA Study to EPD and recommend the project proponent to deal with the issue as an operational issue of the existing facilities in the Castle Peak Power Station and liaise closely with EPD on plans to manage the situation. Mr David Crighton agreed to provide further information on the following for Members' information –

(a) procurement strategy of different materials for the retrofitted operations;

(b) quality of influents, wastewater treatment process and sludge composition of the LS-FGD Wastewater Treatment System; and

(c) quality of gypsum.

(Post-meeting note: The project proponent provided the requested information after the meeting.)

Action

Agenda Item 5: Monthly Updates of Applications under the Environmental Impact Assessment Ordinance

23. Members noted the updates.

Agenda Item 6: Any Other Business

Tentative items for discussion at the 96th meeting

24. The Chairman informed Members that according to the tentative schedule provided by EPD, there were no EIA reports scheduled for the next meeting to be held on 23 October 2006. The Secretariat would liaise with EPD nearer the time and notify Members in due course.

Agenda Item 7: Date of Next Meeting

25. The next meeting was scheduled for 23 October 2006.

(Post-meeting note: The meeting scheduled for 23 October 2006 was cancelled.)

EIA Subcommittee Secretariat
October 2006