

For discussion on
20 July 2007

**Legislative Council
Panel on Environmental Affairs**

**Environmental Impacts Arising from the Proposed Construction
of a Liquefied Natural Gas Receiving Terminal at South Soko Island**

PURPOSE

This paper provides Members with information relating to the Environmental Impact Assessment (EIA) of the Castle Peak Power Company Limited's (CAPCO) Liquefied Natural Gas (LNG) Terminal and Associated Facilities in Hong Kong.

THE STATUTORY EIA PROCESS

2. The construction and operation of the LNG receiving terminal and the associated facilities is a designated project under the EIA Ordinance. In addition to approvals to other aspects of the proposed project, CAPCO must therefore obtain an approval of the EIA report and an environmental permit under the EIA ordinance before they could proceed with constructing and operating the terminal and the associated facilities.

3. The Environmental Protection Department (EPD) under the EIA Ordinance issued an Environmental Impact Assessment (EIA) Study Brief to CAPCO on 23 June 2005, following public consultation on the project profile submitted by the CAPCO in May 2005.

4. The CAPCO submitted on 19 October 2006 an EIA Report for a LNG Terminal in Hong Kong for approval under Section 6(2) of the EIA Ordinance (EIAO) and also an application for Environmental Permit under Section 10(1) of the EIAO for the construction and operation of the LNG Terminal and its Associated Facilities at South Soko Island. After consulting the relevant authorities, EPD determined on 15 December 2006 that the EIA report met the requirements of the Study Brief and the Technical Memorandum on EIA process and the EIA Report was suitable for public inspection.

5. The CAPCO exhibited the EIA Report on 27 December 2006 for the inspection of the public for 30 days until 25 January 2007. The EIA Report was discussed at the Advisory Council on the Environment's (ACE) EIA Sub-committee on 19 January 2007 and further considered by the ACE at its meeting on 12 February 2007. The ACE has endorsed the EIA report subject to a number of conditions.

6. The Environmental Protection Department (EPD) and the relevant authorities under the EIAO have carefully considered the comments from the ACE and all the comments from the public submitted under the EIA Ordinance. In accordance with the provisions of the EIA Ordinance and its Technical Memorandum, the EPD, in conjunction with other relevant authorities, concluded on 3 April 2007 that the EIA Report for the Liquefied Natural Gas (LNG) Terminal should be approved with conditions and an Environmental Permit (EP) should be granted to the CAPCO for the construction and operation of the LNG Terminal and its associated facilities at South Soko Island. The approval conditions of the EIA report for LNG Terminal under EIA Ordinance include:

- a. The Applicant shall set up an Environmental Monitoring Committee (EMC), and shall report back the details of the EMC to the Advisory Council on the Environment.
- b. The Applicant shall put in place an Environmental Management System (EMS), and shall report back the details of the EMS to the Advisory Council on the Environment.
- c. The Applicant shall provide sufficient resources for the implementation of the Environmental Enhancement Plan (EEP), and shall report back the details of the EEP to the Advisory Council on the Environment.
- d. The Applicant shall establish a Scientific and Educational Advisory Committee (SEAC) under the Environmental Enhancement Plan (EEP), and shall report back the details of the SEAC to the Advisory Council on the Environment.
- e. The Applicant shall submit a landscape master plan to the Environmental Monitoring Committee for consultation before seeking approval under the Environmental Permit.
- f. The Applicant shall strengthen the Environmental Monitoring and Audit programme to include the monitoring of water quality

impact, particularly with respect to the monitoring of residual chlorine and temperature at and around the discharge point of the cooling water system.

- g. The further information submitted by the Applicant on 7 March 2007 under Section 8(1) of the Ordinance for elaborations and clarifications of the EIA report as exhibited under Section 7(1) of the Ordinance shall form part of the approved EIA report, and shall be placed on the Ordinance Register and the Ordinance website (<http://www.epd.gov.hk/eia>).

7. To ensure all mitigation measures recommended in the EIA report will be properly and fully implemented, EPD, in consultation with the relevant authorities, has imposed a full package of stringent environmental requirements and mitigation measures as conditions under the Environmental Permit. The stringent conditions, among others, include:

- a. CAPCO is required to set up an Environmental Monitoring Committee as well as a Scientific and Education Advisory Committee to advise and monitor the environmental performance of the construction and operation of the project.
- b. With a view to facilitate protection of the ecology and wildlife on and around Soko Island, CAPCO is also required to prepare and implement an Environmental Enhancement Plan for the marine life and environment of the Soko and report back the progress of its implementation to the ACE on a regular basis. CAPCO is required to fully implement and maintain all the measures in the Plan during the entire life of the project.
- c. With a view to ensure a high degree of transparency, CAPCO is required to set up a dedicated website for the project to facilitate public access to the monitoring and implementation information and to install a series of web cameras on the South Soko Island during the construction of the project to provide 24-hour real time visual monitoring.

8. The statutory process under the EIA Ordinance is just one of the many procedures that the CAPCO has to comply with before the LNG Project can proceed. The EIA Ordinance only deals with the environmental acceptability of the Project. Other aspects of the project, including its Financial Plan under the Scheme of Control Agreement and

its compliance with other regulatory regimes in Hong Kong, have to be assessed and necessary approval from the Government obtained before CAPCO could proceed with the project.

THE ADMINISTRATION RESPONSES TO KEY ENVIRONMENTAL CONCERNS

9. WWF(HK)'s letter to Legislative Council dated 14 June 2007 raised a number of environmental issues relating to CAPCO's proposed Liquefied Natural Gas (LNG) Receiving Terminal at Soko Islands. The following is our response to those issues:

Compatibility of Marine Park with the LNG Receiving Terminal

10. Regarding the impacts of the project on the functions of the potential marine park, the project proponent highlighted that the operational phase impacts, including the seawater intake system, would not compromise the function of the potential marine park. The day-to-day operations of the LNG facility, which would be fairly benign, would occur mainly on land. The vessel would only dock at the terminal once a week and a small workforce would man the terminal. A comprehensive package of environmental enhancement measures was proposed for both marine conservation and upgrading of terrestrial facilities. The Aviation Fuel Receiving Facilities within the Sha Chau & Lung Kwu Chau Marine Park is a local example of how industrial facilities and conservation areas can co-exist within the same area.

11. The plan to designate the surrounding waters of Tai A Chau as a marine park will not be jeopardized as a result of the proposal to construct the LNG Receiving Terminal. Taking into account the mitigation measures proposed by CAPCO in its EIA report for the construction and operation of the proposed Terminal, AFCDC considers that the designation of the marine park will not be affected by the implementation of the LNG Terminal project. The Government is now considering the relevant resource allocation issues for the designation of the marine park. The implementation schedule of the marine park can only be drawn up after the resource allocation issues have been resolved.

Fisheries Resources and Marine Ecological Impacts Arising from the Proposed LNG Receiving Terminal, including the Open Rack Vaporizer

12. A detailed review and a nine-month detailed sampling of larval fishes have been carried out in the EIA Study. The survey and

modelling results showed that there were no significant differences in the distribution of larval fish and fish egg density between the South Soko sampling stations, the identified sensitive spawning and nursery grounds of Southern Hong Kong waters and the non-spawning and nursery grounds of Western Lantau.

13. The scale of the proposed cooling water system, including the Open Rack Vaporizer, was not particularly large. While the LNG project would result in a loss of about 0.6 ha of fishery and spawning areas around the Soko Islands, the area is not significant when compared with the overall fish spawning and nursery grounds in Hong Kong as the loss is less than 0.003% of the overall areas. Having regard to the high fertilization rate of fish eggs in spawning seasons and the high natural mortality rate of fish larvae in the marine environment, the impact of the cooling water system on the fisheries resources was not considered to be significant.

14. The EIA report has demonstrated that the proposed LNG Terminal and the ecology could co-exist on Soko, and that the potential impacts on biodiversity and fisheries are acceptable with the recommended mitigation measures implemented. The mitigation measures include:

- a. Reduce the size of reclamation to 0.6ha and remove the breakwater at Tung Wan of South Soko Island to minimize direct habitat loss for dolphins and other marine life.
- b. Use dredging instead of jetting during pipe-laying works and use silt curtain to minimize impacts on water quality.
- c. Implement a marine mammal exclusion zone within a radius of 250m from dredgers during the dredging works.
- d. Avoid any dredging works during the calving season of dolphins and porpoises.
- e. Use bubble curtain in piling works to reduce underwater noise.
- f. Implement environmental enhancement measures for marine conservation and to set up an Environmental Monitoring Committee.

15. In addition to the mitigation measures above, CAPCO also agrees to implement a comprehensive package of environmental enhancement measures for marine conservation. The proposed enhancement measures include provision of artificial reefs, and regular commissioning of biodiversity surveys and other educational facilities and activities.

16 While the decision on a USA project was raised at the WWF(HK)'s letter, it is relevant to note that the project differs to the CAPCO's proposed project at Soko Islands in terms of the design and operation modes. It would not be appropriate to compare the two proposed projects. For instance, that USA project is an offshore floating facility using electric power generators and vaporisers that have air emissions, whereas the receiving terminal for CAPCO's proposed project is located on an island using cable power supply with no air emissions from vaporisers or generators during normal operation.

Cumulative Effects with Other Projects

17. The EIA for the LNG terminal has assessed the cumulative environmental impacts based on the best information available at the time of assessment. However for those at the preliminary planning stage, their future developments would be subject to the statutory EIA process under the EIA Ordinance including the assessment of cumulative environmental impacts of other relevant existing, committed and planned projects and would have to demonstrate the environmental acceptability before they can proceed.

**Environmental Protection Department
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