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ACE Paper 7/2010

For advice on 19 April 2010

Report on the 112th Environmental Impact Assessment Subcommittee Meeting

INTRODUCTION

At its meeting on 22 March 2010, the Environmental Impact Assessment (EIA) Subcommittee considered the EIA report on "Development of a 100 MW Offshore Wind Farm in Hong Kong" submitted by the Hongkong Electric Company Limited (HEC). Separately, the Subcommittee agreed before the meeting that the EIA report on "Black Point Gas Supply Project" submitted by the Castle Peak Power Company Limited (CAPCO) could be considered by circulation without the need to invite the project proponent to attend the meeting.

ADVICE SOUGHT

2. Members are requested to consider the views of the Subcommittee and advise on the two EIA reports.

EIA report on Development of a 100 MW Offshore Wind Farm in Hong Kong

(ACE-EIA Paper 1/2010)

NEED FOR THE PROJECT

3. The HKSAR Government has set a target of meeting 1% to 2% of Hong Kong's total electricity supply by renewable energy by 2012. This project has an electricity generation capacity of about 100 mega-watt (MW), producing about 1.6% of the total electricity generated by the applicant in 2008.

4. The potential for large-scale land-based wind farm development in HKSAR is limited owing to lack of land availability. With the availability of offshore technology, offshore waters offer more useable space for large scale wind farm development.

DESCRIPTION OF THE PROJECT

5. The project is located in the southern waters and at the southwest of Lamma Island. The project location and cable alignment are shown at **Annex A1**. Key elements of the project include –

(i) around 28 to 35 turbines each of 2.3 to 3.6 MW power generation capacity;
(ii) an offshore substation (it may be replaced by an onshore substation subject to detailed engineering design);
(iii) interconnecting submarine electricity cables (**Annex A2** refers);
(iv) an offshore wind monitoring mast; and
(v) an onshore lay down area and quayside for material storage and pre-assembly works at the Lamma Power Station.

6. The EIA has assessed the worst-case scenario in terms of deployment of number of turbines (i.e. 35 numbers), design of substation (using offshore development) and type of foundation (using monopole design with scour protection). The final design of the project, including choice of turbine numbers, substation and their installations, turbines layout and cable routing, will be made at the later detailed design phase.

7. The project constitutes a designated project under item D.1 Schedule 2 of the EIA Ordinance (EIAO): "*Public utility electricity power plant*".

CONSIDERATION OF ALTERNATIVE OPTIONS

8. The EIA has considered various options for project locations and construction methods. With the use of constraint mapping and comparative assessment of the potential sites in the site selection, environmental sensitive areas, such as important coral sites, have been avoided. Among the potential sites considered, the site at southern waters having relatively short distance to the Lamma Power Station and hence shortened construction duration, cable length and travelling distance will reduce the associated environmental impacts during

construction and operation of the project.

9. Percussive piling for turbine foundations is recommended as it is the most common and proven construction method used internationally in the industry of offshore wind farm. Compared with bored piling, percussive piling will avoid dredging and have much shorter construction duration, and hence will have lesser water quality impact.

VIEWS OF THE SUBCOMMITTEE

10. Members noted that the public inspection period of the EIA report was from 8 February to 9 March 2010. Public comments received by the Environmental Protection Department (EPD) before the Subcommittee meeting were circulated to Members for reference before the meeting. Separately, a submission addressed to the Director of Environmental Protection (DEP) and copied to the Council as well as the written response of the project proponent to some Members' questions was circulated to Subcommittee Members for information before the Subcommittee meeting.

11. A summary of issues discussed by the Subcommittee is at **Annex B**.

12. The Subcommittee agreed to request the project proponent to provide supplementary information regarding noise impact assessment and detailed construction programme. The supplementary information (at **Annex C**) provided by the project proponent was circulated to all Subcommittee Members for consideration.

RECOMMENDATION OF THE SUBCOMMITTEE

13. Having regard to the findings and recommendations of the EIA report and supplementary information provided by the project proponent, the Subcommittee agreed to recommend to the full Council that the EIA report could be endorsed with the following proposed conditions –

(a) the project proponent should submit to the DEP for approval, before commencing the construction of the project, the final layout of the wind farm turbines with demonstrations that the final layout, among the possible alternative layouts and arrays, has minimized the footprint of the project and visual impacts on visual sensitive

receivers;

(b) the project proponent should submit to the DEP for approval, before commencing the construction of the project, a fisheries enhancement plan incorporating measures, including deployment of artificial reefs, in consultation with the fishery sector and the Agriculture, Fisheries and Conservation Department;

(c) the project proponent should not conduct percussive piling works from December to May which is the peak sighting season of Finless Porpoises in the area;

(d) the project proponent should enhance the Environmental Monitoring and Audit (EM&A) on percussive piling noise, covering the monitoring of noise levels at nearby noise sensitive receivers and underwater noise levels at selected monitoring locations. The detailed noise monitoring plan, including measurement methodology and selection of monitoring locations, and the results of the EM&A should be submitted to the independent environmental checker and the EPD; and

(e) to facilitate communications and consultation in respect of environmental impacts of the project, the project proponent should, within six months upon the issue of the Environmental Permit, set up a Stakeholder Liaison Group comprising representatives of concerned parties, including those related to fishery sector and environmental groups, to advise on the design, construction and operation of the project and should inform the Advisory Council on the Environment (ACE) and the DEP in writing the membership and terms of reference of the Stakeholder Liaison Group and should take into account ACE's views. The project proponent should place all minutes of meetings, relevant documents and associated papers of the Stakeholder Liaison Group on the dedicated website set up by the project proponent, within one month of the dates of the meetings.

14. The Subcommittee also recommended the Secretary for the Environment to closely monitor the fuel mix used for electricity generation by the HEC to ensure that the burning of coal would be reduced proportionately with the generation of renewable energy by wind power upon completion of the project.

EIA report on Black Point Gas Supply Project

(ACE-EIA Paper 2/2010)

NEED FOR THE PROJECT

15. According to CAPCO, the project would provide a replacement for the natural gas source currently supplied to CAPCO from the Hainan Island's Yacheng 13-1 gas field which is expected to be depleted as early as 2012. CAPCO also indicates that a stable and cost-efficient way to supply natural gas to Hong Kong is essential for the operation of Black Point Power Station (BPPS). Hence, CAPCO's present plan is to import gas from the Southern Guangdong Province, via two new submarine natural gas pipelines and two associated Gas Receiving Stations (GRSs) at Blackpoint.

DESCRIPTION OF THE PROJECT

16. CAPCO indicates that natural gas will be imported from the western Shenzhen and eastern Zhuhai coastline, through two new submarine natural gas pipelines across the Tonggu Waterway and the Urmston Road shipping channel to the BPPS (**Annex D** refers).

17. The two new submarine pipelines will be installed approximately 100 to 200 m to the north of the existing pipeline, and within the HKSAR waters, they will be approximately 5 km in length. These two pipelines will be between 32" to 42" in diameter, and they will be located in two separate trenches about 100 m apart. The first pipeline and GRS is scheduled for completion in 2012; the second pipeline and GRS could commence construction within 24 months of commissioning of the first phase.

18. The two GRSs will be located at the BPPS, and will be constructed in two phases. The first GRS will be constructed and operated within the site boundary of the BPPS, while the second GRS will be constructed and operated on a piece of land to be reclaimed (approximately 0.5 ha of land area). The reclamation works will also include the construction of an approximately 200 m long vertical seawall.

19. The project inside Hong Kong constitutes a designated project under items H.2 and C.12 of Part I of Schedule 2 of the EIAO, i.e. construction of *"submarine gas pipelines"* and *"a dredging operation exceeding 500,000 m^3"* respectively.

20. According to CAPCO, the construction and operation of the two submarine natural gas pipelines and the associated gas export facilities in Mainland China will be handled by the gas suppliers in the Mainland. These facilities will be subject to the relevant regulatory and permitting systems of the Mainland authorities. Nevertheless, during the EIA study for the Project in Hong Kong, CAPCO has also carried out project specific cumulative impact assessment, where appropriate, by taking into account respective construction works in the Mainland waters.

VIEWS OF THE SUBCOMMITTEE

21. Members noted that the public inspection period of the EIA report was from 12 February to 13 March 2010. No public comment was received by the EPD during the public inspection period. Separately, the written response of the project proponent to some Members' questions was circulated to Subcommittee Members for information before the Subcommittee meeting. Having considered the EIA report and information provided, the Subcommittee agreed before the meeting that the EIA report could be considered by circulation without the need to invite the project proponent to attend the meeting.

RECOMMENDATION OF THE SUBCOMMITTEE

22. Having regard to the findings and recommendations of the EIA report and information provided by the project proponent, the Subcommittee agreed to recommend to the full Council that the EIA report could be endorsed with the proposed condition that the project proponent should seek the agreement of relevant authorities on the waste disposal plan for contaminated marine sediment generated by the project and submit the waste disposal plan to the DEP before commencing the construction of the project.

EIA Subcommittee Secretariat
March 2010