Development of an Offshore Wind Farm in Hong Kong

Minutes of Fourth Stakeholder Liaison Group Meeting

Held on 17 August 2012 at 2:30pm on 11/F, Hongkong Electric Centre, 44 Kennedy Road, Hong Kong

Present (in alphabetical order):

Mr. Lin-wai CHAN (Lamma Island (North) Rural Committee)

Mr. Norman CHAN (HK Electric)

Dr. Luk-ki CHENG (Green Power)

Mr. Yuk-tong CHOW (Lamma Island (South) Rural Committee)

Ms. Charlotte FAN (Meeting Facilitator)

Mr. Terence FONG (Environmental Resources Management – Hong Kong Limited)

Mr. Prentice KOO (Green Peace China)

Mr. Ying-leung KWAN (HK Electric)

Ms. Connie LAU (Environmental Resources Management – Hong Kong Limited)

Mr. Frank LAU (HK Electric) – Chairman

Dr. Alan LEUNG (WWF-Hong Kong)

Prof. Dennis Y. C. LEUNG (Department of Mechanical Engineering, University of Hong Kong)

Dr. Cho-nam NG (Hong Kong Bird Watching Society)

Dr. Jasmine NG (Environmental Resources Management – Hong Kong Limited)

Mr. Jovy TAM (Environmental Resources Management – Hong Kong Limited)

Dr. Chi-tong TSE (Department of Electrical Engineering, The Hong Kong Polytechnic University)

Mr. Rico WONG (The Conservancy Association)

Ms. Frances YEUNG (Friends of the Earth (HK))

Ms. Lai-fun YU (Islands DC Member)

Mr. Chi-ming YUNG (Islands DC Member)

Absent with apologies:

Mr. Shup-ng CHAN (Cheung Chau Office of Hong Kong Fishermen's Association)

Mr. Kam-wah LAW (Lamma Fishermen's Association)

Hon. Yung-kan WONG (Legislative Council Member (Functional Constituency – Agriculture and Fisheries))

Ref. No.	Issue/Discussion	Follow-up Actions & Responsibilities
1.	Chairman Mr. Frank LAU (HK Electric) welcomed all Stakeholder Liaison Group (hereafter referred to as "SLG") members to attend the 4th SLG meeting. Ms. Charlotte FAN (Meeting Facilitator) briefly summarized the meeting agenda which included follow-up actions from the 3rd SLG meeting and the progress of the offshore wind farm project. After the presentation would be a one-hour question and answer session.	Meeting minutes to be circulated by Facilitator among all SLG members and agreed and posted on HK Electric's website within one month of SLG meeting.
2.	The Chairman invited Mr. Jovy TAM (ERM) to report the follow-up actions from the 3rd SLG meeting which included the feasibility of applying Clean Development Mechanism (CDM) for this Offshore Wind Farm Project and a brief introduction on the baseline monitoring methods for the avifauna and marine mammal monitoring of the Project.	--
3.	Mr. Jovy TAM presented background of the CDM and the eligibility for its application. He concluded that HK Electric's Offshore Wind Farm Project did not fulfill the application requirement of a CDM Project. Mr. TAM proceeded to present the baseline monitoring methods for the avifauna and marine mammal monitoring of the Project.	--
4.	Regarding the project progress, the Chairman announced that installation of the Wind Monitoring Station (WMS) was completed and the meteorological and oceanographic monitoring campaign had commenced since March 2012 to collect an approximately year-long field data on-site. The Chairman also reported progress of the Fisheries Review and Consultation Committee (FRCC) and stated that the proposals regarding fishery management and artificial reef were approved at the Second FRCC Meeting. Mr. TAM then introduced in detail the fishery management and artificial reef options of the Project. Following Mr. TAM's presentation, Mr. Norman CHAN (HK Electric) introduced the WMS's operation and presented the wind data so far collected.	--

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5.	The Facilitator invited members for questions concerning the Project.	--
6.	The Chairman added that HK Electric would arrange personnel to visit the WMS on weekly basis to ensure proper operations of all equipment on board of the WMS. Besides, HK Electric carried out improvement to the WMS to ensure its integrity during typhoon periods.	
7.	A SLG member asked about the data recovery rate of the LIDAR System installed at the WMS. HK Electric replied that the data recovery rate was up to 100%. In addition, the WMS was equipped with mechanical anemometers to ensure the overall data reliability and recovery rate. A SLG member asked the scan height of the LIDAR unit. HK Electric replied that the LIDAR scan heights ranged from approximately 20m to 180m above sea level which had adequately covered the highest and lowest tip heights of the wind turbine rotors.	--
8.	A SLG member asked the implications on the wind farm design in terms of the numbers and capacity of wind turbines as the initial wind data showed that the wind farm output might be higher than that predicted in the EIA Study. The Chairman replied that capacity of the wind farm would maintain at 100MW and the number of wind turbines to be installed would be based on the capacity of individual wind turbine. A higher energy output from wind turbines could imply an additional saving on coal consumptions and hence the associated emissions. Another SLG member asked the selection criteria of wind turbine capacity. The Chairman stated that selection of wind turbines for this Project would be determined by the aviation height restriction imposed by the Civil Aviation Department (CAD) as well as the offshore wind turbine models available in the market. According to CAD's current requirement, the height restriction imposed on this Project was 145m above sea level. In view of this limitation, HK Electric considered it unlikely to select wind turbine models of capacity higher than 3.6MW in order to meet CAD's requirement.	--

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9.	A SLG member asked the view of the fisherman groups towards installation of artificial reefs within the voluntary no-take zone. HK Electric replied that the artificial reefs within the voluntary no-take zone mainly come from the scour protection around the wind turbine foundations. For safety of the wind turbines as well as fishing operations, the arrangement to establish a no-take zone within the 50m advisory safety zone around each wind turbine had been discussed and agreed by the fisherman groups at the FRCC meetings. In addition, radars, surveillance cameras and loudspeakers, etc. would be installed in the wind farm area to alert those fishing vessels entering into the advisory safety zones.	--
10.	A SLG member asked if there would be any restriction on fishing methods within the wind farm fishable area. HK Electric replied that the artificial reef programme was still in its preliminary phase. At the moment there was no restriction on the allowable fishing methods within the wind farm fishable area including the artificial reef zones. HK Electric believed that the fishermen would choose the most suitable fishing methods based on their experiences as well as the final design of the artificial reef structures. A SLG member expressed his concerns that certain fishing methods may cause damages to the artificial reef structures and also worried about fishing operations by the non-local vessels. ERM replied that in response to comments raised by the fishery sector during the FRCC meetings, it was decided to deploy artificial reefs within the fishable area of the wind farm so that fishermen could operate in close proximity to the artificial reefs. At the same time fishermen representatives understood that certain fishing methods were not suitable for use at the artificial reef zones. The effects of fishing gear on the artificial reefs would be taken into account when finalizing the artificial reefs design. The Chairman added that fishable artificial reefs would be installed at the northwestern corners of the wind farm. Also, artificial reefs would be deployed in the voluntary no-take area within the 50m advisory safety zone of each wind turbine foundation which was established based on safety concerns. HK Electric would monitor the advisory safety zone (voluntary no-take area) using surveillance cameras and would use loudspeakers to alert those approaching fishing vessels to leave the zone. The artificial reefs installed within the voluntary no-take zone would be of smaller-scale structure and suitable for small fishes to stay and grow up while those at the fishable area would be of a stronger structural design. HK Electric hoped to achieve a balance between the need of fishery sector and conservation by a combination of the two types of artificial reefs. Concerning fishing by non-local vessels, it was considered to be a territory-wide issue beyond the control of HK Electric. During the FRCC meetings, representatives from the Agriculture, Fisheries and Conservation Department (AFCD) had stated that there would be amendments to the legislation aiming to strengthen the control on fishing by non-local vessels within the Hong Kong waters.	--

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11.	A SLG member asked about monitoring of the fishing operations within the fishable area and the monitoring of the effectiveness of the artificial reefs. The Chairman replied that a monitoring programme would be implemented in consultation with AFCD to determine the effectiveness of the artificial reefs in enhancing fisheries resources. Within the voluntary no-take zone, HK Electric would alert fishing vessels entering such area to leave due to safety concern. As such, the voluntary no-take zone would be easier to manage and monitor. Different types of artificial reefs would be installed within the voluntary no-take and fishable areas which could enhance the fisheries resources in the area. This would benefit the fishery sector and led to a balance of the sector and wind farm manager roles by implementation of the advisory safety/voluntary no-take zone.	--
12.	A SLG member raised his concern about the risk of spear fishing within the wind farm fishable area. HK Electric replied that information concerning safety within the wind farm would be released to the public during the development of the Project. Since waters within the fishable area were of same nature as other waters of Hong Kong that HK Electric would have no control on, HK Electric would not be authorized to restrict any diving activities within the fishable area of the wind farm. ERM stated that HK Electric would keep in touch with the fishery sector and release to them information about the artificial reef designs, locations, fish species found and the potential risk of different types of fishing operations within the area.	--
13.	A SLG member asked whether other marine activities would be allowed within the voluntary no-take zone. The Chairman quoted the concerns raised by HK Electric's marine safety consultant regarding unauthorized access of the wind turbines by leisure craft. HK Electric would impose design on the wind turbine foundation to make it difficult for the public to scale the wind turbine structure from leisure crafts. HK Electric would also use loudspeakers to advise the public leaving the advisory safety zone if they had entered. The effects of other marine activities to the wind turbines were of low concern.	--
14.	A SLG member asked who would be responsible if the artificial reef was damaged. The Chairman pointed out that HK Electric would discuss with AFCD and the Marine Department about the monitoring programme of the artificial reefs and would then consider employing Contractor to implement such monitoring programme. Generally, the public would access the artificial reefs for the fishery resources and it was unlikely that they would intentionally damage the artificial reefs.	--

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	The SLG member also asked whether it was possible to extend and advance the baseline avifauna monitoring to more than 1 year and the kind of piling method to be used for the Project. The Chairman understood the Green Groups would like to collect baseline data for a longer period. However, the wind farm development and its associated expenditure were under the supervision by the Environment Bureau. As the Project was still in its feasibility study stage, it would be difficult to get approval from the HKSAR Government for extending and advancing the baseline avifauna survey. It would only be possible to consider extending/advancing the baseline survey after the Project had been approved by the HKSAR Government. Regarding the piling method, HK Electric had employed Consultant to investigate the suitable piling methods for the Project considering the sediment characteristics, water current and water depth of the wind farm area. It was estimated that the piling method could be confirmed by end of 2012. Gazette for the wind farm site investigation would commence by end 2012.	
15.	A SLG member asked the possibility of using suction cans for piling works of the Project. The Chairman replied that the feasibility of using suction cans for this Project would be one of the investigations to be reviewed by the Consultant. The Chairman also pointed out that the scale of suction cans would be comparatively large since the marine mud density in Hong Kong was generally low. As such, three piles would be required for each wind turbine if suction cans were to be adopted, and the diameter of each pile was anticipated to range from 15 to 20m. The cost-effectiveness and any implication to the project programme on using suction cans would need to be reviewed. The Chairman also added that the piling operation would avoid the breeding season of finless porpoises in order to prevent any potential impact to them.	--
16.	A SLG member raised whether it would be possible to use floating foundation. The Chairman replied that HK Electric would be open to consider different foundation types for the Project. However, floating foundation was understood to be adopted in deep water areas. The water depth at the proposed wind farm site ranged from 17 to 22m and as such the use of monopile would believe to be more suitable.	--
17.	A SLG member asked how many personnel would be stationed at the WMS and whether there were any fire safety measures. HK Electric replied that the WMS was normally unmanned except during routine maintenance. The WMS would also be under continuous monitoring by guard boats on a 24-hour basis. Fire extinguishers were provided on the WMS.	--

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18.	A SLG member asked the arrangement for purchasing electricity generated by the wind farm. The Chairman replied that the electricity generated from the wind farm would be fed directly into the HK Electric's power grid and as such it would not be able to differentiate electricity generated from coal, natural gas and wind.	--
19.	A SLG member queried why the avifauna and marine mammal baseline survey transects did not cover waters at the west of Lamma Island. ERM replied that the location of transects was the same as that adopted for the finless porpoises and avifauna mammal baseline surveys adopted in the EIA stage, which was necessary to establish better data comparison. It could be considered to revise the transect distribution whenever there was a need to update the Environmental Monitoring and Audit Manual of the Project in future.	--
20.	A SLG member questioned if the monitoring frequency would be increased at the southern Lamma waters during the breeding season of finless porpoises. ERM replied that when undertaking the monitoring on finless porpoises, waters on both sides of the transects would also be monitored. As such, the monitoring had already included the southern Lamma waters and this was in line with the prevailing monitoring methods for finless porpoises. During the survey, the number and behavior of adult and juvenile observed would be recorded. In addition, the wind farm site had avoided the breeding site of finless porpoises and thus the method and route of monitoring would be the same during both the breeding and non-breeding seasons.	--
21.	The Chairman announced that the SLG members would complete their two-year service by end of this year. He would welcome all members to renew their tenure or nominate another member of their organization to sit in the SLG for the next tenure. The Chairman thanked all members for their contribution in the past and advised that a formal letter would be sent to all members within a month after this meeting to consult their intention of renewing their service tenure.	HK Electric will send letter to all SLG members within a month to consult their intention of renewing the service tenure.
22.	This meeting adjourned at 4:30 pm.	--