33/F, Revenue Tower, 5 Gloucester Road, Wan Chai, Hong Kong
香港灣仔告士打道 5 號稅務大樓 33 樓

ACE Paper 14/2015
For advice on 12 October 2015

Report on the 130th Environmental Impact Assessment Subcommittee Meeting

PURPOSE

The Environmental Impact Assessment (EIA) Subcommittee (EIASC) considered the EIA report on "Desalination Plant at Tseung Kwan O" (the Project) under Section 6(2) of the Environmental Impact Assessment Ordinance (EIAO) at the meeting on 14 September 2015. The Project constitutes a designated project under Part I, Schedule 2 of the EIAO. The EIA report was submitted by the Water Supplies Department (the Project Proponent).

2. Members are requested to consider the views of EIASC at paragraph 10 below and advise on the way forward for handling the EIA report.

BACKGROUND AND NEED FOR THE PROJECT

3. Studies on development of desalination facilities in Hong Kong have confirmed the technical feasibility of desalination technologies using reverse osmosis under local conditions for producing potable water complying with the World Health Organization guidelines for drinking water quality. Having taken into account the functionality, costs, environmental benefits and dis-benefits, the Project Proponent has conducted the planning and investigation study and confirms that Tseung Kwan O (TKO) Area 137 of about 10 hectares in size is a suitable location for siting the proposed desalination plant in terms of quality of nearby seawater and its close proximity to a strategic water supply network. The plant is planned with an initial output capacity of 135 million litre per day (Mld) with provision for future expansion up to 270 Mld, which is equivalent to about 5% and 10% respectively of the total freshwater demand in Hong Kong.

4. At present, freshwater resources in Hong Kong come from local water gathering grounds and supply from Dongjiang in Guangdong Province. However, the territory's freshwater resources are facing various challenges including climate change and keen competition for Dongjiang water resources due to rapid developments in the Pearl River Delta region. Climate change will bring about more frequent dry weather and consecutive drought periods. Severe droughts will result in the whole region of Dongjiang River Basin facing water shortage. To safeguard water supply in Hong Kong, there is a need to develop a stable alternative water resource by seawater desalination which is not susceptible to climate change. The Total Water Management strategy conducted by the Project Proponent has concluded that a desalination plant has the benefit of easy operation in a small footprint in an environmentally less sensitive location. The plant can provide a new potable water source that is not susceptible to climate change and thereby alleviate the shortage of freshwater resources due to climate change.

5. The Project will comprise of the following key components/works –

(i) A new desalination plant in TKO Area 137 with a water production capacity of 135 Mld expandable to an ultimate output capacity up to 270 Mld;
(ii) A dedicated 9 km long trunk feed system for transferring freshwater output from the desalination plant to the existing TKO Fresh Water Primary Service Reservoir in Po Lam;
(iii) Natural slope mitigation works within the Clear Water Bay Country Park overlooking the northeast boundary of the new desalination plant at TKO Area 137; and
(iv) Associated civil, structural, geotechnical, landscaping and electrical and mechanical works.

6. Please refer to the ACE-EIA paper 2/2015 on the EIA report at **Annex A** for details of the Project.

VIEWS OF THE DIRECTOR OF ENVIRONMENTAL PROTECTION

7. The Director of Environmental Protection (DEP), in conjunction with the relevant authorities, considers that the EIA report has met the requirements of the EIA Study Brief and the Technical Memorandum on EIA Process. Comments from the public and ACE will be taken into account by DEP in deciding whether or not to approve the EIA report under the EIAO.

VIEWS OF THE SUBCOMMITTEE

8. Public inspection period of the EIA report was from 30 July to 28 August 2015. The two public comments received by the Environmental Protection Department (EPD) during the inspection period and the gist of the comments were issued to Subcommittee Members for reference on 1 September 2015, with copies to non-Subcommittee Members.

9. A summary of the issues discussed by EIASC at the meeting on 14 September 2015 on the Project is prepared at **Annex B**.

RECOMMENDATION OF THE SUBCOMMITTEE

10. Having regard to the findings of the EIA report and the information provided by the Project Proponent, EIASC agrees to recommend to the full Council to endorse the EIA report with the following conditions and recommendations –

Conditions of endorsement

(a) The Project Proponent should conduct an updated fisheries survey as early as possible and in any case, not later than 12 months before commencement of the construction of submarine works to verify if there is any fish spawning and nursery ground in the vicinity of the planned location and alignment of the seawater intake and submarine outfall for fine-tuning of the detailed design of these facilities as necessary. Details of the baseline fisheries survey shall be drawn up in consultation with the Agriculture, Fisheries and Conservation Department (AFCD) for submission to the Director of Environmental Protection (DEP) for approval before commencement of the survey.

(b) The Project Proponent should include in the Environmental Monitoring & Audit (EM&A) programme of the project post-construction regular monitoring on fisheries in the vicinity of seawater intake and submarine outfall areas to ensure no significant impacts on fisheries resources. The EM&A programme should also include post-construction regular monitoring on corals identified in the vicinity of the submarine outfall area to ensure that the health status of the corals was kept in good condition. Details of the fisheries and coral monitoring programme shall be submitted to DEP for approval prior to commencement of operation of the desalination plant.

Recommendations

(c) The Project Proponent should conduct further run(s) of the effluent dispersion model to ensure that the nearby coral groups near the submarine outfall will not be adversely affected under the most critical conditions including tidal water current or seasonal water current which will bring effluent or reverse osmosis (RO) concentrate to the direction of the corals and typhoons which will blow the RO concentrate towards the corals. The Project Proponent should report the model run results to ACE EIA Subcommittee.

(d) The Project Proponent should explore the use of landfill gas as an alternative source of power supply for the operation of the desalination plant and its ancillary facilities.

(e) The Project Proponent should carry out all slope mitigation works on the natural slopes within the Clear Water Bay Country Park in the northeast boundary of the desalination plant with reference to the guidelines and standards adopted by the Civil Engineering and Development Department, and prior written consent of AFCD should be sought for any proposed slope works inside the country park.

(f) The Project Proponent should minimize the generation of marine dredged materials and rock fills from the project, and these materials should be re-used in-situ as far as practicable.

(g) The Project Proponent should consider further mitigation measures to keep impacts on marine ecology and marine life to a minimum, including the use of double silt curtain, further minimization of both daily volume of marine sediments to be dredged and the dredging rate.

11. EIASC also agrees that the Project Proponent and its consultant team would not be required to attend the full Council meeting on 12 October 2015 to explain the project and to answer any questions which Council Members might have on the EIA report.

EIA Subcommittee Secretariat
October 2015