

**EIA report on
“Hung Shui Kiu Effluent Polishing Plant”**

**Relevant Extract of the draft minutes of
the Environmental Impact Assessment Subcommittee meeting
held on 15 August 2022**

Question-and-Answer Session (Open Session)

Emergency Discharges and Emergency Power Supply

2. Noting that the treated effluent from the HSKEPP would be discharged to the Deep Bay during maintenance of the existing North West New Territories (NWNT) Tunnel, a Member enquired about the expected frequency of such maintenance works. Ms Suki Pun advised Members that according to the available record, there was no need of effluent discharge into the Deep Bay due to the maintenance of NWNT Tunnel since the tunnel came into operation in 1993. The assumption of a 12-day bypass period in the EIA report was considered as a reasonable assumption for assessment purpose.

3. The Chairperson and a Member were concerned about the possible impacts on the migratory waterbirds inhabiting in the Deep Bay in the dry season in case treated effluent was to be discharged during maintenance works. Ms Anna Chung explained that there would be detrimental impact on marine lives in case the dissolved oxygen (DO) level in the waterbody dropped to a critical level. Given that the ambient level of DO would be higher in the dry season, emergency discharges in the dry season would cause less adverse impacts than in the wet season. Mr Desmond Ng considered that emergency discharges to the Deep Bay should be uncommon based on the historical operation record of NWNT Tunnel. He added that dual power supply and standby units would be put in place to cater for unexpected power interruption. Notwithstanding the unlikelihood, the Member suggested that the possible impacts on migratory waterbirds should be taken into account when devising the emergency discharge plan.

4. Apart from the level of DO, the Chairperson enquired whether the project proponent had considered the impact on other water quality parameters, such as biochemical oxygen demand, total inorganic nitrogen, unionized ammonia and suspended solids etc. when deciding the timing for tunnel maintenance works. Ms Anna Chung said that according to their assessment, the estimated changes in the

level of other water parameters were expected to be small whereas the drop in DO level would be more significant. As such, the DO level was the most important indicator in deciding the timing for maintenance works. Ms Chung furthered that the mangroves in the Inner Deep Bay, which was supposed to have the most impact in case of emergency discharge, would be able to withstand the changes of other water quality parameters.

5. In response to the Chairperson's enquiry about the differences in recovery time for emergency discharge under power supply failure and scheduled tunnel maintenance works, Ms Suki Pun explained that while raw sewage would be discharged to the Deep Bay in case of power supply failure, the water quality should resume normal within 0.5 to 2 days once the power supply resumed normal within two hours. As for the water modelling for a 12-day maintenance during which treated effluent of secondary plus treatment level would be discharged, it was expected that the water quality would resume normal within 21 days. The differences in the recovery time for the two scenarios were determined by the amount, duration and quality of effluent discharged to the Deep Bay. Ms Anna Chung added that during NWNT tunnel maintenance, the water modelling was assessed based on the assumption that treated effluent from the San Wai Sewage Treatment Works (SWSTW) would also be discharged to the Deep Bay.

6. A Member further enquired about details of emergency discharge under adverse weather such as black rainstorm signal. Mr Desmond Ng replied that there would be proposed flood tanks under Hung Shui Kiu/Ha Tsuen New Development Area (HSK/HT NDA) to retain the excessive rainwater in case of heavy rainstorms.

7. Noting that there were storage tanks for biogas, a Member enquired if the operation of the HSKEPP could be sustained by the biogas generated in the facility in case of power supply failure. Mr Desmond Ng said that while the feasibility of generating energy from biogas in case of emergency could be studied, dual power supply provided by the electricity company would still be required to ensure the stability of power supply.

Compensatory Tree Planting

8. As there were some 200 trees to be removed in the project, a Member suggested the project proponent to consider transplanting the large trees and reuse the felled trees as far as possible. Ms Christie Li explained that the trees to be felled in the project were not suitable for translocation due to their species, locations and

conditions concerned. Based on the preliminary tree survey, Ms Li indicated that no tree with a diameter at breast height (dbh) of more than 500 mm or species of conservation interests was identified at the project site. Most of the trees to be removed were invasive species like *Leucaena leucocephala* or common tree species like *Macaranga tanarius*. In addition, she said that most of the trees in the site were grown in clusters which made it difficult to extract a root ball of reasonable size for the purpose of transplantation. Notwithstanding the above, Ms Li said that a more detailed Tree Preservation and Removal Proposal (TPRP) would be worked out at the later stage to consider the possibility of transplanting. Mr Desmond Ng added that the felled trees would be reused for landscape and furniture in the project as far as possible.

9. In reply to a Member's question on the details of compensatory tree planting, Ms Christie Li said that there would be vertical greening as well as plantations around the site for screening and greening purposes to mitigate the landscape and visual impact of the facility. She added that native tree species recommended in the Greening Master Plan and the Street Tree Selection Guide would be deployed in the site boundary while exotic tree species might be planted within the site to enhance biodiversity. With regard to the tree species for compensatory planting, the Member reminded and Ms Li confirmed that *Xanthostemon chrysanthus* and *Terminalia mantaly* were not native tree species. The Member suggested that native tree species should be deployed as far as possible and exotic shrub species could be considered if they would bring positive ecological functions such as attracting butterflies. Ms Li confirmed that more details would be worked out in the TPRP at a later stage.

10. Pointing out that the ecological function of isolated trees around the site boundary was relatively low, a Member suggested that there should be larger clusters of trees in quiet corners of the site to provide appropriate habitats for the inhabitation of fauna species. As sewage treatment facilities would not normally be open for public access, the Member opined that the ecological value should be more important than the landscape or aesthetical functions when deciding the tree species to be deployed.

Odour Emission

11. The Chairperson enquired if there were sufficient control measures to prevent odour nuisances particularly during hot and humid days to the local residents. With reference to the wind direction and location of the HSKEPP, a Member added

that the odour emitted from the facility might spread to the other residential areas during summer. Ms Anna Chung highlighted that there were no residential housing units within 500 meters of the site and odour nuisances were thus not anticipated. She also confirmed that different weather conditions, such as hot and humid days throughout the year had been taken into account in the modelling for air quality impact assessment in the EIA report.

12. A Member further enquired and Ms Anna Chung confirmed that the maximum capacity for the co-digestion of food waste and sewage sludge had been taken into account in the air quality impact assessment and the design of the HSKEPP.

13. In view of the potential odour emissions, a Member suggested the project proponent to set up a liaison committee with the stakeholders such as local residents with a view to enhancing communications and addressing their concerns. The Member further suggested and Mr Desmond Ng agreed that visits could be arranged to showcase the green design of the project and appeal to the stakeholders' understanding and acceptance of the HSKEPP.

14. Addressing a Member and the Chairperson's concerns, Mr Desmond Ng explained that the odourous sources would be covered and deodorisation units with odour removal efficiency of 95% would be installed. Noting that the landscape and visual design could affect one's perception of odour in connection with the facility, Mr Ng said that green design would be incorporated to enhance the public's acceptance of the HSKEPP.

15. In response to the Chairperson's enquiry, Mr Desmond Ng replied that about 200 wet tonnes of pre-treated food waste would be transported daily to the HSKEPP for co-digestion. A Member suggested the project proponent to learn from the various odour emission problems encountered by O·PARK1 given that the HSKEPP would handle the same amount of food waste. Ms Suki Pun clarified that the food waste transported to the HSKEPP would be already pre-treated while pre-treatment processing would be carried out in EPD's food waste pre-treatment centre. Ms Pun stressed that the incoming pre-treated food waste would be transported through fully enclosed trucks or pipes to avoid odour nuisances.

16. To avoid odour nuisances to the community, the Chairperson and a Member asked for details of food waste to be handled in the facility, including the source, treatment and transportation arrangements. Mr Desmond Ng explained that the pre-

treatment and transportation process of food waste, which were under the purview of EPD, were outside the scope of the EIA project. Nevertheless, he confirmed that the pre-treated food waste would be transported in fully enclosed trucks or pipes to the pre-treated food waste handling areas within the HSKEPP. These areas would be enclosed with negative pressure and air curtains to mitigate odour emissions.

17. A Member suggested that appropriate air quality monitoring measures should be put in place during the transportation of food waste as well as within the project site to ensure that the facility would not bring adverse impact to the neighbourhood. Mr Desmond Ng replied that air quality monitoring measures within the HSKEPP had been set out under the Environmental Monitoring and Audit programme in the EIA report. He reiterated that monitoring of odour emissions during the transportation of food waste by EPD was not under the scope of the current project.

Carbon Reduction

18. Two Members went on to enquire about the measures to minimise carbon emissions during the construction and operational phases and the possibility to attain carbon neutrality in the project. Mr Desmond Ng shared that green design such as green roof, photovoltaic system, utilisation of biogas from co-digestion of food waste and sewage sludge from the HSKEPP and the SWSTW would be deployed to reduce the carbon footprint of the project. The energy generated from co-digestion was expected to meet about 70% to 80% of the overall energy demand of the HSKEPP at certain period of time. He added that the project proponent would strive to minimise the carbon footprint of the project as far as possible.

19. Noting that the HSKEPP would be a low-rise facility with a construction programme of around four years and nine months, a Member asked if the programme could be shortened with a view to reducing the carbon emissions in the construction phase. Mr Desmond Ng explained that construction programme was devised with reference to the local labour supply and resources required of the project. While efforts would be made to optimise further the construction schedule, he said that there might not be much room for further compression given that the last 9-12 months out of the four years and nine months programme was for testing and commissioning of the plant.

20. The Chairperson and a Member enquired if construction methodologies such as off-site manufacturing would be adopted to minimise construction time and carbon

emissions during the construction phase. Mr Desmond Ng replied that the construction contractor would be required to consider appropriate construction methods and technologies such as the Modular Integrated Construction (MiC) and Design for Manufacture and Assembly (DfMA), with a view to reducing the carbon footprint of the project.

21. A Member suggested the project proponent to give due considerations to the design of the facility including the usage and durability of the construction materials. While there might not be appropriate alternatives for construction materials like cement, Mr Desmond Ng confirmed that the project proponent would take into account the past performance and durability of equipment and plant machineries in the procurement process to avoid possible wastage.

Waste Management

22. The Chairperson and a Member opined that the project proponent should minimise waste generation and reuse the inert construction and demolition (C&D) materials on site as far as possible. In response to the Member's question on the plan to reuse and recycle the C&D waste generated from the demolition of the San Wai Preliminary Treatment Works, Mr Desmond Ng said that part of the C&D waste would be reused for landscape and filling on site while the rest will be transferred for public filling in other construction projects in Hong Kong as far as possible.

Foundation Methods

23. Noting that pre-bored socketed steel H-pile was the preferred foundation method, a Member enquired about the corresponding mitigation measures as such method would involve longer construction time and generate more excavated materials. Mr Desmond Ng explained that the proposed method was only a preliminary option pending detailed ground investigation (GI) works to be conducted upon the resumption of project site. He said that appropriate foundation method would be devised based on the ground information obtained at a later stage.

Adoption of BEAM Plus principles

24. In response to the Chairperson's question on the adoption of BEAM plus, Ms Suki Pun said that the project proponent targeted to achieve "Platinum" rating under the BEAM Plus Neighbourhood or New Buildings in the design and construction of the project. Ms Pun supplemented that the application would be

submitted during the detailed design stage upon the confirmation of the design of other facilities in the HSK/HT NDA.

Bat Survey

25. With reference to Section 8.5.3.7 of the EIA report on mammal survey, a Member wondered how the distribution of two unknown bat species could be confirmed in the bat survey. Ms Connie Tsoi explained that the two bat species and their distribution could be identified based on the acoustic information collected from the bat detectors and cross-referenced with the database on the Hong Kong Biodiversity Information Hub of the AFCD. Ms Tsoi said that they were advised by the AFCD to record the bat species as “unknown” in the EIA report for the time being as the Information Hub was still under development. Details of the bat species could be included at a later stage upon the AFCD’s confirmation.

Conclusion

26. There being no further questions from Members, the Chairperson thanked the project proponent team for their detailed presentation and clarification in relation to the project.

(The presentation team left the meeting at this juncture.)

Internal Discussion Session (Closed-door Session)

27. The Chairperson advised Members that the EIASC should make recommendations to the ACE on the EIA report with the following consideration -

- (i) endorse the EIA report without condition; or
- (ii) endorse the EIA report with conditions and / or recommendations; or
- (iii) defer the decision to the full Council for further consideration, where issues or reasons for not reaching a consensus or issues to be further considered by the full Council would need to be highlighted; or
- (iv) reject the EIA report and inform the project proponent of the right to go to the full Council.

28. The Chairperson proposed and Members agreed to endorse the EIA report with conditions and recommendations.

Compensatory Tree Planting

29. Similar to some other EIA projects, the Chairperson suggested that the project proponent should draw up a tree compensation plan. A Member added that the project proponent should consult terrestrial ecologist(s) and the relevant authorities when devising the plan.

30. The Chairperson suggested with the agreement of Members that the project proponent should devise a detailed Compensatory Tree Planting Implementation Plan (the Plan) with engagement of terrestrial ecologist(s), which should include details of the planting objectives, planting numbers and locations and list of tree species to be used, with the aim to enhance ecological values and urban biodiversity. Native tree species should be deployed as far as possible, unless the deployment of exotic species would bring ecological enhancements. The project proponent should consult the Director of Agriculture, Fisheries and Conservation (DAFC) on the Plan prior to submission to the DEP for approval before the commencement of compensatory tree planting.

Contingency and Response Plan

31. With reference to other similar EIA projects, a Member suggested that the project proponent should devise a contingency plan for accidental and emergency discharges which should be approved by the EPD. Mr Terence Tsang had no objection to impose a condition in this regard.

32. The Chairperson suggested and Members agreed to impose a condition for the project proponent to develop a contingency and response plan (the Plan) for handling potential overflow of effluent under adverse weather conditions and emergency discharges due to other incidents such as power supply failure or maintenance works. The project proponent should consult the DAFC on the Plan prior to submission to the DEP for approval before the commencement of the project.

33. As regards the timing for NWNT Tunnel maintenance, a Member pointed out that emergency discharge of sewage to the sea could cause the DO level to drop to below 2.8, which would cause suffocation of marine lives in a very short timeframe. As such, he was of the view that the impact on water quality, in particular the DO level, should be the key consideration in scheduling the tunnel maintenance. Explaining that the water DO level was usually higher in winter than in summer, the Member opined that it was reasonable for the project proponent to

carry out tunnel maintenance works in the dry season with a view to minimising water quality impact to the Deep Bay. The Chairperson agreed with the Member that a condition or recommendation in this regard was not necessary.

Odour Emission

34. With reference to the earlier discussion on odour emission, the Chairperson noted that the transportation of food waste was not under the purview of the current EIA project. As such, it would be not be appropriate to require the project proponent to take odour control measures in the food waste transportation process. Nevertheless, the Chairperson suggested and Members agreed that the project proponent should be recommended to liaise proactively with the EPD to put in place appropriate odour control measures with a view to minimising odour emissions during the transportation of food waste to the project site.

Waste Management

35. Further to the suggestion of a Member, the Chairperson echoed that the project proponent should be recommended to minimise the generation of C&D waste as well as reuse and recycle on site the C&D materials generated from the project as far as possible.

Sustainability and Carbon Reduction

36. The Chairperson recapped a Member's earlier suggestion in using suitable and durable materials, and design to reduce carbon emissions in both the construction and operational phases of the project. The Member suggested that the project proponent should be recommended to explore ways such as deploying off-site fabrication to reduce the construction time as well as minimising excavation to reduce waste generation. Mr Terence Tsang agreed to the incorporation of the above in a recommendation.

37. The Chairperson suggested with the support of the meeting that the project proponent was recommended to explore ways to adopt green design and construction approach such as proper scheduling of construction programme to avoid repetitive works, offsite construction methods and assemble the building blocks on site, reuse building materials and felled trees as well as the choice of suitable and durable materials with the aim to minimise carbon emissions from the project and achieve carbon neutrality.

38. There being no other comments from Members, the meeting agreed that the EIA report could be endorsed with two conditions and three recommendations. The project proponent team would not be required to attend the subsequent full Council meeting.

(Post-meeting notes: The list of proposed conditions and recommendations was circulated to Members for comment on 22 August 2022.)

**EIA Subcommittee Secretariat
September 2022**