

By post and by fax at 2147 0894

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Ms Anissa WONG Sean Yee
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Dear Ms WONG

Views on Environmental Impact Assessment Report on the Expansion of Hong Kong International Airport into a Three-Runway System

In response to the Environmental Impact Assessment Report on the Expansion of Hong Kong International Airport into a Three-Runway System, the Institution is pleased to provide herewith our views on the subject for your consideration.

Thank you.

Yours sincerely



Ir Victor CHEUNG Chi Kong
President
The Hong Kong Institution of Engineers

VC/wc

Enclosure

**Views from the Hong Kong Institution of Engineers
on Environmental Impact Assessment Report on the
Expansion of Hong Kong International Airport into a Three-Runway System**

Introduction

The Hong Kong International Airport (HKIA) has been facilitating the development and strengthening of various economic pillars, including finance, trade and logistics, tourism and professional services, in Hong Kong. We treasure to enhance the status of the HKIA as the international aviation hub. However, to sustain the connectivity advantages of the HKIA, and in view of the increasing business activities in Hong Kong and mobility needs for passengers around the world, enlarging the handling capacity of the HKIA to fulfill the increasing long-term demand would be necessary.

2. The Hong Kong Institution of Engineers (the HKIE) recognises that the HKIA is expected to reach the maximum practical runway capacity between 2019 and 2022 according to the HKIA Master Plan 2030 (MP2030) Study. Hence, with the driving concern on the overall long-term sustainable development of Hong Kong, the HKIE has expressed support for the expansion of the HKIA into the three-runway system (3RS) in order to enhance the capacity of the airport and thus facilitating development in Hong Kong.

Environmental Impact Assessment of the Project

3. The HKIE notes that the Environmental Impact Assessment (EIA) Study has been carried out and the EIA Report is exhibited for public inspection by Environmental Protection Department. In general, the HKIE is of the view that the EIA Report demonstrates itself to have followed the acceptable standard in truly identifying, assessing and reporting the impacts of the 3RS Project in various aspects of concern, and the EIA Report is systematic, comprehensive, and fact-based. In particular, we are pleased to offer further views in some aspects as follows:

Air Quality

4. We welcome to note that Airport Authority Hong Kong (AAHK) has been implementing a number of measures and initiatives aiming at reducing air emissions from airport activities and operations, including banning all idling vehicle engines on airside since 2008, banning the use of auxiliary power unit (APU) for all aircraft at frontal stands by end 2014, requiring all airside saloon vehicles to be electric by end 2017, increasing charging stations for electrical vehicles (EVs) and electric ground service equipment (GSE), improving the emission performance of GSE, requiring all of the AAHK's diesel vehicles to use biodiesel, etc. We believe that implementation of these measures and initiatives are important in effectively controlling the emissions for now and for the future operation of the 3RS.

5. Meanwhile, based on the trends of future aircraft emissions forecast by the International Civil Aviation Organization (ICAO), there will be improvement in the fuel combustion design for new aircraft models as an international requirement, therefore the aircraft emission performance will be improved in the long run. Also, with the 3RS, the aircraft departure from the South Runway can be shifted to the Centre Runway, thus reducing the concentration of pollutants at Sha Lo Wan Village and Tung Chung Town Centre area. We are of the view that with the above and further sustaining of the emissions control measures, the 3RS can meet the criteria under the new air quality objectives during operation.

Noise Impact

6. We note that there have been measures being implemented since the past decade to minimise the aircraft noise generated from the operation of the airport, including not allowing airlines to schedule the noisier marginally compliant aircraft to operate between 2300 and 0659, requiring all subsonic jet aircraft landing or taking off in Hong Kong meeting the noise standards, implementing a set of flight procedures for aircraft to depart making the turn to the West Lamma Channel to reduce noise impact on noise sensitive receivers, etc. In addition, according to the EIA Report, under the 3RS operation there are other aircraft noise mitigation measures identified, including putting the South Runway on standby at night between 2300 and 0659, requiring departures to take the southbound route via the West Lamma Channel at night from 2300 to 0659, and implementing west flow for departures and east flow for arrivals during night-time. The HKIE has reviewed these measures and considers that they are effective in reducing the noise exposure to be below the noise criteria on those areas under and near the flight tracks.

Sewerage and Sewage Treatment

7. The sewage generated from the airport will be conveyed by gravity sewers to Tung Chung Sewage Pumping Station (TC SPS). The TC SPS also receives sewage from nearby Tung Chung New Town and will pump the collected sewage to Siu Ho Wan Sewage Treatment Works (SHW STW) for treatment before discharging into the sea. According to the EIA Report, as it is expected that the increase in handling capacity of the airport under 3RS will generate a total sewage flow of 43,500m³/day, the existing gravity sewers from the airport to the TC SPS will reach its full capacity by 2027. Upgrading the gravity sewers is therefore required. Also, in conjunction with the proposed Tung Chung New Town Extension and future developments in the northern Lantau, the existing design peak flow capacities of TC SPS and SHW STW will be exceeded in 2023 and 2026 respectively. Therefore, TC SPS and SHW STW are also required to be upgraded. It is noted that the upgrading of the gravity sewer, TC SPS and SHW STW will be completed by 2026, 2022 and 2026 respectively by the Government in conjunction with the developments in Tung Chung New Town Extension and in the northern Lantau. No interim sewage treatment facilities will be required for the expansion of HKIA into 3RS.

8. With reference to the above information from the EIA Report, and in view of various planned developments in the northern Lantau and the airport, the HKIE suggests the Government to devise better planning and schedule monitoring of the

design and construction of the said upgrading works, so as to ensure timely completion of the necessary infrastructures for the proposed developments for better effective sewage treatment.

Waste Management

9. The HKIE is of the opinion that the proposed construction methods for the Third Runway are feasible, suitable and environmentally friendly. Deep Cement Mixing (DCM) method is proposed to stabilise contaminated marine mud in place without the need of removal for the site formation of the land for the third runway and the associated infrastructure. The HKIE agrees that the proposed construction method is most suitable under the circumstances of this Project and will be able to substantially reduce the amount of unsuitable or contaminated material to be disposed of. While marine sediments will be generated by other construction activities such as laying of submarine pipelines and cables, the HKIE agrees to the arrangement as stated in the EIA Report that the marine sediments will be treated and reused on-site as backfilling materials to avoid the need for disposal off-site. After all, the HKIE believes that with the proper selection and use of proven engineering technology, impacts to the environment due to the construction of 3RS Project can be kept to be under well control.

Marine Ecology

10. It is noted that the Project will result in the permanent loss of 672ha of seabed of which about 40% is part of the capped contaminated mud pit. However, the ecology value of the corresponding seabed is believed to be relatively low. Also the adoption of the method of DCM can minimise disturbance to the marine environment. Hence, it is believed that the construction of the airport expansion will have minimal potential ecological impacts.

11. However, according to the EIA Study, the construction and operation phases will have some impacts on the Chinese White Dolphin (CWD) population in Hong Kong waters, mostly related to the loss of CWD habitat and the reduction of the size of CWD travelling areas. In the EIA Report, specific mitigation measures for the protection of CWDs and marine ecology have been recommended during construction and operation phases, which include avoiding peak calving season for CWDs when undertaking bored piling activities, acoustic decoupling of construction equipment mounted on barges, setting speed restrictions for construction vessels whining areas where CWDs are likely to occur, diverting SkyPier High Speed Ferrys travelling to/from Zhuhai and Macau to the north of Sha Chau and Lung Kwu Chau Marine Park (SCLKCMP) and restricting their speed to 15 knots across areas with high CWD abundance. We believe that these measures are appropriate and effective.

12. A new marine park of approximate 2,400ha is to be established by linking the planned Brothers Marine Park (BMP) and the existing SCLKCMP. The extended marine park is expected to improve the conservation prospects for the Hong Kong sub-population of CWDs and will be contiguous with the Pearl River Estuary CWD national nature reserve established by the Mainland. However, it is aware that there are voices in the community for worries on the practicality and effect of the

compensatory marine park. To address these genuine concerns from them, the HKIE suggests the Government and AAHK to closely work out with the concerned parties in better putting forward the completion of the marine park and related measures to best realise its positive outcome to the marine ecology to gain public confidence.

Conclusion

13. The HKIE believes that the EIA Report has clearly laid down the analysis and rightly proposed the corresponding initiatives for solutions as well as the mitigation measures. After all, it is noted that the EIA Report provides a logical and substantiated framework for addressing environmental impact on the 3RS Project.

14. While the need of expansion of HKIA into 3RS has been recognised, it is considered that with adoption of better technology and planning, the potential impact to the environment can be made insignificant with proper design of layout and construction methods. With the implementation of the proposed mitigation measures, the expansion of the HKIA into a 3RS will not create unacceptable impact to the environment.

15. However, it reveals in the EIA Report that the determinant factor is how well and effective all these initiatives and mitigating measures can be timely and rightly designed in details and implemented according to the schedule. For such, the HKIE believes that the Government and AAHK should acknowledge the uncertainties and worries from the concerned parties in the public, and set up mechanism to partner with the green groups and other stakeholders for taking forward the proposals vigorously. Mechanism should also be in place to ensure that the design and construction of the expansion of the HKIA together with the committed environmental mitigation measures can be equally focused on and monitored in the coming construction and operation phases.