

**Confirmed Minutes of the 236th Meeting
of the Advisory Council on the Environment (ACE)
held on 10 June 2019 at 2:30 pm**

Present:

Mr Stanley WONG, SBS, JP (Chairman)
Prof Nora TAM, BBS, JP (Deputy Chairman)
Ms Sylvia CHAN
Ir Cary CHAN, JP
Ir Samantha KONG
Mr Adam KOO
Miss LAM Chung-yan
Prof LAU Chi-pang, JP
Ms Julia LAU
Ir MA Lee-tak, SBS
Dr SUNG Yik-hei
Prof WONG Sze-chun, BBS, JP
Ir Conrad WONG, BBS, JP
Mr Owin FUNG (Secretary)

Absent with Apologies:

Ms Carmen CHAN, BBS, JP
Dr Michael LAU
Dr Winnie LAW
Prof Albert LEE
Mr Andrew LEE
Prof Kenneth LEUNG, JP
Ir Prof Irene LO, JP
Ms Christina TANG
Mr Simon WONG, JP

In Attendance:

Ms Maisie CHENG, JP	Permanent Secretary for the Environment / Director of Environmental Protection
Ms Maggie CHIN	Assistant Director of Planning / Technical Services, Planning Department (Acting) (PlanD)
Mr Simon CHAN	Assistant Director (Conservation), Agriculture, Fisheries and Conservation Department (AFCD)

Ms Fanny HUI	Principal Information Officer, Environmental Protection Department (EPD)
Ms Becky LAM	Chief Executive Officer (CBD), EPD
Miss Dora CHU	Executive Officer (CBD) 1, EPD
Miss Carman LEUNG	Executive Officer (CBD) 2, EPD

In Attendance for Item 3:

Mr Dave HO	Assistant Director (Air Policy), EPD
Mr Brian LAU	Principal Environmental Protection Officer (Air Policy), EPD
Ms Queenie LEE	Principal Assistant Secretary (Electricity Research), Environment Bureau (ENB)
Mr Andy HO	Chief Electrical and Mechanical Engineer (Electricity Team), ENB
Mr Simon CHEE	Senior Treasury Accountant (Financial Monitoring) 1, ENB
Ms Jerry JI	Assistant Secretary for the Environment (Electricity Reviews) 1, ENB

In Attendance for Item 4:

Mr Terence TSANG	Assistant Director (Environmental Assessment), EPD
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Action

The Chairman welcomed Ms Maisie Cheng, the new Permanent Secretary for the Environment / Director of Environmental Protection to the meeting and Mr Owin Fung, the new Deputy Director of Environmental Protection (3) and Secretary of the Advisory Council on the Environment to the meeting. He informed Members that apologies of absence had been received from Ms Carmen Chan, Dr Michael Lau, Dr Winnie Law, Prof Albert Lee, Mr Andrew Lee, Prof Kenneth Leung, Ir Prof Irene Lo, Ms Christina Tang and Mr Simon Wong.

Item 1 : Confirmation of the draft minutes of the 235th meeting held on 4 March 2019 (Closed-door session)

2. The draft minutes were confirmed with proposed amendments by a Member in para. 40 received before the meeting.

Item 2 : Matters arising (Closed-door session)

3. There were no matters arising from the minutes of the last meeting.

Item 3 : Review of the Seventh Technical Memorandum for Allocation of Emission Allowances for Power Plants
(ACE Papers 7/2019 & 8/2019)

4. The Chairman informed Members that *ACE Paper 7/2019* sought Members' views on the proposal to further tighten emission allowances for the power plants in Hong Kong starting from 1 January 2024 by way of issuing a new Technical Memorandum (TM) (i.e. the Eighth TM) under Section 26G of the Air Pollution Control Ordinance (Cap. 311) (APCO). A background note on the subject matter, i.e. *ACE Paper 8/2019*, prepared by the Secretariat had been circulated to Members for reference before the meeting.

5. There was no declaration of interest by Members.

[The presentation team joined the meeting at this juncture.]

Presentation cum Question-and-Answer Session (Open session)

6. Mr Dave Ho gave an opening remark, and with the aid of a PowerPoint presentation, Mr Brian Lau briefed Members on the legal framework, best practical means (BPM) requirements adopted by power plants to control their emissions and factors considered in the review of the Seventh TM for allocation of emission allowances for the power plants. He sought Members' support on the proposal to further tighten the emission allowances by way of issuing a new TM (i.e. the Eighth TM) starting from 1 January 2024 under the APCO.

Allocation of emission allowances

7. A Member observed that there was a noticeable gap between the actual emissions and the emissions allowances for the first three TMs, and enquired whether the Government should take a more aggressive approach in the setting of the emission allowances.

8. Mr Dave Ho advised that the BPM requirements were adhered to the time when setting the emission allowances. He pointed out that in setting the First TM, the power companies had to explore the feasibility of retrofitting emission control devices or using low-emission coal for some of their then existing coal-fired generating units (coal-fired units) to comply with the emission caps. As such, the power companies could have more room to reduce their emissions. With the progressive tightening of the emission allowances and the room for further retrofit becoming smaller, it was much more challenging for the power companies to meet the tightened emission allowances. Hence, to maximise the use of gas-fired generating units (gas-fired units) was one of the key measures adopted by power companies to meet the emission allowances. In addition, power companies had sought the Government's approval under the Scheme of Control Agreements (SCAs) to construct new natural gas-fired units and retire some existing coal-fired units to meet the fuel mix target and further reduce their emissions.

9. Pointing out that nitrogen oxides (NO_x) was one of the major air pollutants and its emission only dropped by 13% from 2010 to 2018, a Member enquired about the way forward to further reduce NO_x emissions and the expected percentage of NO_x emission reduction by 2022 when the Seventh TM would take effect.

10. Mr Brian Lau advised that the new gas-fired units equipped with selective catalytic reduction (SCR) devices would help bring about significant reductions in NO_x emission when they were put into operation progressively from 2020 to 2023 together with the retirement of some existing coal-fired units. Mr Dave Ho supplemented that NO_x concentrations could primarily be reduced by retrofitting the existing coal-fired units with SCR devices, which was subject to the availability of space, or to change the fuel mix such as by increasing the use of natural gas. He advised that the emission allowances of NO_x would be reduced by about 60% from 2010 to 2022.

Incentives for emission reduction

11. Considering that there was at least four years' lead time for each TM to take effect, the Chairman remarked that it was possible for the power companies to achieve emissions lower than the emission caps set for a certain year due to technological advancements and availability of low-emission fuels. He enquired

whether there were any incentives to encourage the power companies to do so.

12. Mr Dave Ho advised that that power companies were liable to penalty for failing to meet the emission allowances set under the TM. Besides, the power companies had paid efforts to improve the energy efficiency of their generating units and reduce their emissions which could lower the operational costs and reduce the need for additional power generation units. For instance, CLP had over the past years upgraded three out of eight of the gas-fired units at the Black Point Power Station. The upgrading work for the remaining five gas-fired units would be completed by 2023.

Electricity consumption

13. A Member enquired whether the forecast of a four percent reduction in electricity demand by the two power companies for the period of 2024 to 2025 was made with reference to the Hong Kong's Climate Action Plan 2030+. Considering the different developments of the two companies, he enquired for the reasons contributing to the same level of estimation of reduction in electricity demand by both companies.

14. Mr Brian Lau explained that the reduction of electricity demand in 2024/25 was made reference to that of 2022 when setting the Seventh TM. He advised that the forecasted electricity demand in 2025 was only slightly higher than the actual electricity consumption in 2018. Mr Andy Ho supplemented that the forecast of reduced electricity demand by the two power companies had taken into account energy efficiency measures outlined in the "Energy Saving Plan for Hong Kong's Built Environment 2015~2025+" and incentives to promote energy efficiency and conservation under the SCAs.

Renewable energy

15. With reference to Hong Kong's realisable renewable energy (RE) potential of 3-4% of the total energy mix for electricity generation as set out in the Hong Kong's Climate Action Plan 2030+, a Member enquired on the present contribution of RE to the total energy mix and the estimated timing for achieving the realisable RE potential. With reference to the second part of the formulae for allocating the emission allowances to the power plants, she noted that the projected emissions

under the adoption of BPM requirements would be offset by the level of RE intake. In other words, the higher the RE intake level, the lower the emission cap would be. She expressed concern that this might disincentivise the power companies from developing more RE.

16. Given the geographical constraints of Hong Kong, Ms Queenie Lee advised that RE currently accounted for less than 1% of the total energy mix for electricity generation. She said that it would be difficult to estimate the timing as to when Hong Kong could reach its full realisable RE potential as this would be subject to many external factors, including the participation and contribution of the community at large. Having said that, she informed Members that the Government had taken the lead in promoting RE, which included developing waste-to-energy facilities and exploring the development of large-scale RE systems in reservoirs and landfills. Furthermore, RE targets had been set for new government buildings. A total of two billion dollars had also been earmarked to install RE facilities in existing Government premises. The Government had also been creating favourable conditions to encourage private sector to adopt RE. For instance, Feed-in Tariff (FiT) Scheme had been introduced under the Post-2018 SCAs to encourage the private sector and the community to invest in distributed RE as the RE generated could be sold to the power companies at a rate higher than the normal electricity tariff rate. The FiT Scheme had gained positive responses from the public with about 3,000 FiT applications received as at April 2019. Last but not least, incentive schemes had been put in place under the Post-2018 SCAs to encourage the power companies to develop RE and facilitate the development of distributed RE.

17. Mr Dave Ho added that the objective of issuing the TMs was to control the emission of specified pollutants from power plants. He explained that the second part of the formulae was only for adjusting upwards or downwards the emission allowances to account for the deviation of the actual RE intake in the year from the anticipated level.

18. The Chairman pointed out that as RE only took up 1% of the fuel mix, it was unlikely that it would have any significant influence on the emission cap and on the incentives for power companies to develop RE. This notwithstanding, he considered that continuous efforts in developing RE could help influence public attitude and aspiration towards greener energy generation and usage, and induce

behavioural changes.

Effectiveness of TMs in reducing emissions

19. To enhance public understanding, a Member opined that the Government should present the implications of emission reductions from the power plants with regard to the improvements in the air quality, health benefits and contributions to combating climate change.

20. While it was difficult to differentiate the air quality improvements attributable to the reduction in power plants emissions from other emission sources, Mr Dave Ho advised that sulphur dioxide (SO₂) was mainly emitted from marine vessels and power plants and hence could serve as an indicator for demonstrating the effectiveness of tightening power plants emissions. He advised that the concentration of SO₂ in ambient air was reduced by 57% over the last 10 years, showing that the tightening of emission allowances of power companies and controlling emissions from marine vessels were effective in improving air quality.

21. With a view to assessing the performance of the power generation units and emission control devices, a Member suggested that comparisons should be made between the actual emissions and electricity generated for public information. She further suggested that the Government should publicise information on actual health benefits achieved via the tightening of the emission allowances and compare and benchmark against the emission allowances and BPMs of overseas countries.

22. Mr Dave Ho advised that the electricity generated was generally increasing from year to year in contrast to the reductions in emissions. He agreed that the information should be made available to the public. As regards the health benefits, he informed the meeting that with reference to the projections made under the review of the Air Quality Objectives (AQOs), the on-going and new measures to reduce emissions from major emission sources, including power plants, would bring about significant health and economic benefits in 2025. Detailed findings of the AQO review had been reported to the ACE in its last meeting. He explained that it would be difficult to compare or benchmark emission allowances of local power plants with those in other countries given the very different locations of power plants and the associated air pollution problems. Having said that, he mentioned that similar to Hong Kong, many overseas places had been adopting the

best available technology as the standard for controlling power plant emissions.

23. With public perception in mind, a Member suggested with the support of the Chairman and another Member that alternative ways of presentation which focused on achievements made, for instance reduction in emissions, health benefits and increased number of blue-sky days, should be considered, and comparisons of these achievements with certain benchmarks, such as targets set under the Paris Agreement, could be made.

24. Ms Maisie Cheng thanked Members for their suggestions and said that the relevant data and information would be supplemented when submitting the Eighth TM to the Panel on Environmental Affairs of the Legislative Council (LegCo) for deliberation.

Conclusion

25. The Chairman commended the Government's effort for bringing about significant improvements in the air quality since the issuance of the First TM, and echoed the views of Members that the publicity of the achievements should be stepped up with a view to enhancing public understanding and appealing for public support. He concluded that Members were supportive of further tightening the emission allowances by way of issuing the Eighth TM and thanked the representatives of EPD for their detailed presentation.

[The presentation team left the meeting at this juncture.]

Internal Discussion Session (Closed-door session)

26. In view of the geographical constraints, the Chairman considered with the agreement of a Member that it was unlikely for Hong Kong to realise its 3-4% of RE potentials by 2030. Having said that, he remarked that continuous efforts in developing RE could demonstrate the Government's determination and commitment to air quality improvements that would in turn influence public aspiration and induce behavioural changes.

27. Instead of focusing on technical details and BPMs, a Member echoed the views of Members that more emphasis should be placed on the proactive measures

being undertaken and achievements made so as to enhance public understanding and support for further tightening the emission allowances by way of issuing a new TM.

28. Given that tidal/wave energy generation was confirmed to be technically feasible in some European countries, a Member suggested that studies should be commissioned to explore the feasibility of generating and using tidal/wave energy in Hong Kong.

29. Ms Maisie Cheng shared that a visit was made to Singapore recently to learn more about, among other things, their RE facilities. Facing similar geographical constraints, she advised that Singapore was focusing on developing and improving technologies related to solar as well as tidal/wave energy generation. With rapid technological advancements, she was optimistic that the estimated share of RE including wind, solar and waste-to-energy could reach 3-4% of the energy mix by 2030.

Item 4 : Report of the 144th EIASC meeting held on 20 May 2019
(Closed-door session)
(ACE Paper 9/2019)

[Mr Terence Tsang joined the meeting at this juncture.]

30. The Chairperson of the Environmental Impact Assessment Subcommittee (EIASC) reported that the Environmental Impact Assessment (EIA) report on “Shuen Wan Golf Course” was discussed at the Environmental Impact Assessment Subcommittee (EIASC) meeting on 20 May 2019. Having regard to the findings of the EIA reports, EIASC recommended the full Council to endorse the EIA report with four conditions and two recommendations. ACE Paper 9/2019 had summarised the discussion and recommendations of the EIASC meeting.

31. While being unable to attend the EIASC meeting, a Member had submitted written suggestions to the project proponent that zero-carbon could be achieved by using landfill gas for electricity generation. Apart from using landfill gas, he considered that the biogas generated from the anaerobic co-digestion at the Tai Po Sewage Treatment works could be used for on-site electricity generation.

32. As explained by the project proponent during the EIASC meeting, the EIASC Chairperson advised that the landfill gas generated in the landfill site was near depletion. Furthermore, there was an on-going agreement for delivery of the landfill gas and biogas generated in the Tai Po Sewage Treatment Works to the Hong Kong and China Gas Company Limited for electricity generation. As such, Members did not propose to further pursue the suggestion.

33. Mr Terence Tsang supplemented that the project proponent had proposed on-site installation of photovoltaic panels to reduce the carbon footprint and other environmental initiatives including harvesting and recycling of rainwater.

34. The Chairman reminded with the agreement of Mr Terence Tsang that the imposition of condition to mandate zero-carbon was not appropriate in this project given that it was not directly related to the environmental impacts posed by the project. As the Director of Environmental Protection (DEP) would take into account the conditions proposed by ACE when finalising the Environmental Permit (EP) for issuance to the project proponents, Mr Tsang recommended ACE to endorse conditions that were reasonable and enforceable, and recommendations should be made instead if a condition could not be justified.

35. With no further comments from Members, the Chairman concluded that the meeting agreed to recommend DEP to endorse the EIA report with the conditions and recommendations as set out in paragraph 9 of the ACE Paper 9/2019. He remarked that it was a win-win situation for environmental protection given that the non-in-situ land exchange allowed proactive conservation of the Sha Lo Tung Valley and revitalisation of the restored landfill site into a golf course with a green design.

[Mr Terence Tsang left the meeting at this juncture.]

Item 5 : Any other business (Closed-door session)

36. There was no other business for discussion at the meeting.

Item 6 : Date of next meeting (Closed-door session)

37. The next ACE meeting was scheduled on 8 July 2019 (Monday). Members would be advised on the agenda in due course.

ACE Secretariat

July 2019