

立法會
Legislative Council

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Panel on Environmental Affairs

**Minutes of special meeting
held on Monday, 6 October 2014, at 4:30 pm
in Conference Room 3 of the Legislative Council Complex**

- Members present** : Hon Cyd HO Sau-lan, JP (Chairman)
Hon LEE Cheuk-yan
Hon James TO Kun-sun
Hon WONG Ting-kwong, SBS, JP
Hon CHAN Kin-por, BBS, JP
Hon Albert CHAN Wai-yip
Hon Claudia MO
Hon Frankie YICK Chi-ming
Hon WU Chi-wai, MH
Hon Gary FAN Kwok-wai
Hon Charles Peter MOK, JP
Dr Hon Kenneth CHAN Ka-lok
Hon Kenneth LEUNG
Hon Dennis KWOK
Hon Tony TSE Wai-chuen, BBS
- Members absent** : Hon CHAN Hak-kan, JP (Deputy Chairman)
Hon Vincent FANG Kang, SBS, JP
Hon Steven HO Chun-yin
Hon CHAN Han-pan, JP
Dr Hon Helena WONG Pik-wan
Dr Hon Elizabeth QUAT, JP
Ir Dr Hon LO Wai-kwok, BBS, MH, JP
Hon Christopher CHUNG Shu-kun, BBS, MH, JP

**Public Officers
attending : For item I**

Mr Andrew LAI, JP
Deputy Director of Environmental Protection (3)
Environmental Protection Department

Mr MOK Wai-chuen, JP
Assistant Director (Air Policy)
Environmental Protection Department

Mr Dave HO
Principal Environmental Protection Officer (Air Policy)
Environmental Protection Department

Clerk in attendance : Ms Miranda HON
Chief Council Secretary (1)1

Staff in attendance : Miss Lilian MOK
Senior Council Secretary (1)1

Ms Mandy LI
Council Secretary (1)1

Miss Mandy POON
Legislative Assistant (1)1

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I. Review of the Third Technical Memorandum for Allocation of Emission Allowances for Power Plants

(LC Paper No. CB(1)2028/13-14(01) — Administration's paper on "Review of the Third Technical Memorandum for Allocation of Emission Allowances for Power Plants"

LC Paper No. CB(1)2028/13-14(02) — Updated background brief on "Technical Memorandum for Allocation of Emission

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Allowances in respect of Specified Licences" prepared by the Legislative Council Secretariat)

The Deputy Director of Environmental Protection (3) ("DDEP(3)") briefed members on the Administration's proposal to reduce emission allowances for power plants starting from 1 January 2019 by way of issuing a new Technical Memorandum ("TM") (i.e. the Fourth TM) under section 26G of the Air Pollution Control Ordinance (Cap. 311) ("the APCO"). He said that the Administration planned to submit the Fourth TM to the Legislative Council ("LegCo") for negative vetting by the end of October 2014. Subject to the approval of LegCo, the Fourth TM would commence before the end of 2014 in order to provide at least four years' lead time for the revised emission allowances in respect of the three specified pollutants in relation to the emission years from 1 January 2019 to take effect.

2. The Assistant Director of Environmental Protection (Air Policy) ("ADEP(AP)") supplemented that during the scrutiny of the second TM in 2010, the review frequency of a TM had been changed from not less than once every three years to not less than once every two years. In order to meet electricity demand in the long run and to improve the environment, the Environment Bureau ("ENB") launched a three-month public consultation on the Future Fuel Mix for Electricity Generation for Hong Kong in March 2014. Since the findings of the consultation and the decision on the fuel mix in the long run would have significant implications for setting emission allowances for electricity generation in 2020 and beyond, the Fourth TM would be reviewed again in 2015 when the outcome of the fuel mix review was available.

Attainment of emission caps under the Fourth TM

3. Noting that the Fourth TM would further tighten the emission allowances for power plants starting from 2019, Mr WU Chi-wai expressed concern as to whether the two power companies would be able to attain the proposed emission caps given that there was no major changes in the fuel mix for local electricity generation before the completion of the fuel mix review. DDEP(3) responded that the CLP Power Hong Kong Limited ("CLP") and The Hongkong Electric Company, Limited were required to increase the overall share of natural gas for local electricity generation from the current around 20% or 30% to about 50% starting from 2015 in order to meet the emission caps as set out in the Second TM. Since a new fuel mix for the long run would not take shape until 2015, the emission allowances for the two power companies in the Third TM (which was issued in 2012 to tighten the emission allowances for power plants starting from 2017) and the Fourth TM (which would be issued by the end of 2014 to tighten the emission allowances for power plants starting from 2019)

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were broadly determined based on the fuel mix structure adopted in the Second TM, i.e. the overall share of natural-gas electricity would be around 50% starting from 2015.

4. DDEP(3) further explained that when working out the emission allowances for the two power companies for 2019, the Administration had taken into consideration new developments after the setting of the Third TM. These included that the emission reduction efficiency of the emission control devices retrofitted by the power companies had been better than the design level, the natural gas delivered from the West-East Gas Pipeline II ("WEP II") contained less sulphur than the limit prescribed in the supply contract, and the power sector would complete the phasing out of heavy fuel oil by ultra-low sulphur diesel for assisting coal-burning by 2019. The Administration had also taken into account the projected local electricity demand for 2019. DDEP(3) also said that the two power companies considered the proposed new emission allowances very tight and challenging. To meet the proposed emission caps, they had to maximize the use of natural gas for local electricity generation and upkeep their emission control equipment. Should their operation encounter events that were beyond their control and had significant emission implications, the Administration would handle these special events in accordance with the APCO and adjust the emission caps as and when necessary.

5. In reply to Dr Kenneth CHAN's enquiry about the emission allowances for 2019 for CLP, DDEP(3) advised that the local electricity generation of CLP in 2019 was anticipated to increase by around 4% as compared to the projection for 2017 when setting the Third TM because of the electricity demand growth in Kowloon, the New Territories and Lantau. Although the increase in the electricity demand would have to be met by additional output from its coal-fired generation units, CLP would need to absorb part of the increase in the emissions of respirable suspended particulates ("RSP") and nitrogen oxides ("NO_x"), and hence the proposed emission allowances for RSP and NO_x would remain unchanged as compared to the levels in the Third TM. As for sulphur dioxide ("SO₂"), due to the fact that the natural gas supplied so far via WEPII had a lower sulphur content than the stipulated standard in the supply contract, the emission allowance for SO₂ could be reduced by 4% despite the increase in CLP's electricity generation in 2019.

Emission of carbon dioxide ("CO₂")

6. Pointing out that the emission of CO₂ from power plants was not regulated in any TM, Mr Kenneth LEUNG queried whether imposing caps on the emissions of only SO₂, NO_x and RSP from power plants was in line with international practices. DDEP(3) responded that the APCO empowered the Administration to set emission caps for power plants and its section 26G provided for the Secretary for the Environment ("SEN") to allocate emission

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allowances for three specified pollutants which were SO₂, NO_x and RSP for power plants by way of a TM. The Environmental Protection Department ("EPD") had been closely monitoring the emissions of individual power plants and a monitoring system had been installed in electricity works to collect data on the three specified pollutants on a real time basis. The two power companies were obliged to meet the emission requirements in a TM and there were penalties for exceeding the prevailing statutory emission limits on the specified pollutants. ADEP(AP) assured members that it was the international practice to set limits on the emission of SO₂, NO_x and RSP from power plants, but not CO₂ as there was currently no practicable technology available for controlling CO₂ emissions. Reduction in CO₂ emission could only be achieved by adjusting the fuel mix, e.g. increased use of natural gas for electricity generation.

7. Mr Kenneth LEUNG further enquired whether the Administration would consider exploring the use of green coal for power generation in order to reduce CO₂ emission and mitigate climate change. ADEP(AP) advised that green coal was a mix of coal and municipal waste. As municipal waste was considered a renewable energy ("RE") source, this mixed fuel was thus called "green coal". In fact, the Administration also proposed to convert municipal waste into energy. DDEP(3) added that the two power companies had been using low-sulphur coal imported from Indonesia for electricity generation. The Administration would explore with them the applicability of new green technologies for power generation in Hong Kong.

Tariff implications

8. Mr Frankie YICK pointed out that any change in the fuel mix of the two power companies or tightening of the emission allowances for power plants might have tariff implications. He enquired whether the Administration would take into account the public's affordability when making emission allocations and set out the assessment of tariff implications in its proposal. DDEP(3) reiterated that section 26G of the APCO empowered SEN to allocate emission allowances for the three specified pollutants for power plants by way of a TM. Under that section, SEN, in making the emission allocations, should have regard to three considerations, i.e. the best practicable means ("BPM") for preventing the emission of that type of pollutant, whether the emission of that type of pollutant would be or be likely to be prejudicial to health as well as the attainment and maintenance of any relevant air quality objective ("AQO"). Since attaining the proposed emission caps for 2019 did not involve new capital investment by the two power companies nor major changes in the fuel mix, there should not be any significant tariff implication.

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9. Mr Frankie YICK was dissatisfied that affordability of the public was not one of the factors of consideration in making emission allocations. He opined that the Administration should strike a proper balance between tightening the emission allowances for power plants and any possible impact on electricity tariff. DDEP(3) responded that Mr YICK's concern could be dealt with more effectively in the context of the formulation of a comprehensive energy policy. To this end, the Administration had launched a public consultation on fuel mix for electricity generation in March 2014 and put forward two fuel mix options for the public's consideration having regard to four key factors, including reliability, safety and prices of electricity supply as well as environmental performance.

Use of natural gas

10. The Chairman expressed concern that the price of Mainland natural gas supplied to Hong Kong had been on the rise and over reliance on natural gas from the Mainland might increase the susceptibility of electricity tariffs to the price volatility of natural gas. While noting there were proposals for constructing natural gas infrastructure facilities (e.g. liquefied natural gas receiving terminals) in Hong Kong, the Chairman asked whether the Administration would consider diversifying the source of supply of natural gas for power generation in Hong Kong with a view to stabilizing the price of natural gas at a reasonable level. DDEP(3) responded that he would relay the issue to ENB officials for a written response.

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(Post-meeting note: The Administration's response was circulated to members vide LC Paper No. CB(1)64/14-15(01) on 16 October 2014.)

11. The Chairman further requested the Administration to make greater efforts to educate members of the public about energy conservation measures so that any increase in electricity tariff could be offset by a lower level of electricity consumption. DDEP(3) advised that the Administration had all along attached great importance to the promotion of energy saving. EPD and other related government departments, such as the Electrical and Mechanical Services Department, had been working closely to promote energy saving measures. The Environment and Conservation Fund had also been providing funding support to various energy conservation projects.

Use of renewable energy

12. The Chairman expressed grave concern about the safety hazards that nuclear power might pose for Hong Kong. She opined that the Administration should promote the greater use of RE instead of increasing the share of nuclear power in the future fuel mix for electricity generation. Mr WU Chi-wai sought

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elaboration on the development and promotion of RE for power generation.

13. DDEP(3) advised that the Administration had examined with the two power companies the feasibility of wide-scale application of RE (e.g. solar power and wind power) in Hong Kong. Given Hong Kong's geographical constraints, solar power and wind power might not have high potential for large-scale development in the territory. Notwithstanding this, new potential RE facilities would be developed, such as the proposed Integrated Waste Management Facility in Shek Kwu Chau and a number of Organic Waste Treatment Facilities which would generate biogas for electricity generation.

Use of low-sulphur coal

14. Mr WU Chi-wai noted that the emission allowance for SO₂ for CLP could be reduced by 4% in the Fourth TM despite the increase in electricity demand in 2019 as compared with the 2017 levels. Since electricity generation was the major emission source of SO₂, Mr WU enquired whether the two power companies could increase the use of low-sulphur coal under the existing fuel mix structure to further reduce power plant emissions.

15. In reply, ADEP(AP) agreed that using low-sulphur coal would generate less emission of pollutants. However, such coal had relatively low electricity output and its burnt residues would accelerate the wear and tear of the mechanical parts of a coal-fired generation unit. DDEP(3) assured members that in making emission allocations, the Administration would keep abreast of technology development and introduce advanced emission reduction technologies as BPM for reducing the emission of the three specified pollutants.

New AQOs and the Fourth TM

16. Dr Kenneth CHAN pointed out that the new AQOs, which were drawn up in accordance with the recommendations of the World Health Organization as well as the standards of other advanced places, had been implemented since 1 January 2014 to improve air quality and would be reviewed at least once every five years to see whether further tightening of AQOs in future was practicable. Noting that the proposed emission allowances would take effect from 1 January 2019 if the Fourth TM commenced before the end of 2014, Dr CHAN enquired how the Fourth TM would tie in with the goal to achieve the new AQOs by 2020.

17. DDEP(3) responded that the Fourth TM which aimed to further reduce the emission allowances for power plants starting from 1 January 2019 would contribute towards the attainment of the new AQOs by 2020. Apart from the Fourth TM, the Administration had also been implementing a wide spectrum of air quality improvement measures to help alleviate air pollution problems.

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Since the public consultation on the future fuel mix would have significant implications on the setting of emissions allowances for electricity generation in 2020 and beyond, the Administration would review the Fourth TM again in 2015 when the outcome of the fuel mix review was available and explore whether there was room to further tighten the emission caps for power plants.

Concluding remarks

18. The Chairman requested the Administration to gazette the Fourth TM and provide a written response to members' enquiry raised at this meeting as soon as possible, so as to facilitate members' decision on the need to form a subcommittee to scrutinize the TM.

II. Any other business

19. The Chairman thanked members for their support and contributions to the work of the Panel in the past two sessions.

20. There being no other business, the meeting ended at 5:17 pm.

Council Business Division 1
Legislative Council Secretariat
24 October 2014