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**Subcommittee on Third Technical Memorandum for Allocation of
Emission Allowances in Respect of Specified Licences**

Meeting on 6 November 2012

Background brief prepared by the Legislative Council Secretariat

Purpose

This paper sets out the development of the Technical Memorandum for Allocation of Emission Allowances in respect of Specified Licences ("TM"), and gives a brief account of the views expressed by the Panel on Environmental Affairs ("the Panel") and the respective subcommittees formed to study the First and Second TMs.

Background

2. To improve air quality, the Hong Kong Special Administrative Region Government reached a consensus with the Guangdong Provincial Government ("GPG") in April 2002 to reduce the emissions of sulphur dioxide ("SO₂"), nitrogen oxides ("NO_x"), respirable suspended particulates ("RSP"), and volatile organic compounds by 40%, 20%, 55%, and 55% respectively by 2010 as compared to 1997.

3. Since 2003, the Administration has been engaging the two local power companies to meet the 2010 emission reduction targets. Emission caps have been imposed on the power stations since 2005 upon renewal of their respective specified process licences. The emission caps have been progressively tightened to ensure that Hong Kong can meet the 2010 emission reduction targets. With the implementation of a series of control measures, Hong Kong has fully met the emission reduction targets for 2010. According to the 2010 Hong Kong Emission Inventory Report, the emission reductions in 2010 for the four pollutants mentioned in paragraph 2 above range from 30% to 59% when compared with 1997.

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4. In accordance with section 26G of the Air Pollution Control Ordinance (Cap. 311) ("the APCO"), the Secretary for the Environment ("SEN") shall by technical memorandum allocate a quantity of emission allowances for each type of specified pollutant, i.e. SO₂, NO_x and RSP, in respect of each specified licence for the operation of power plant in relation to each emission year commencing on or after 1 January 2010. Where a TM has been laid on the table of the Legislative Council ("LegCo"), section 37B(2) of the APCO provides that LegCo may, by resolution passed at a sitting of LegCo within the 28-day period or during the next 21-day period if so extended pursuant to section 37(B)(4)(a), amend the TM in any manner consistent with the power to issue the TM.

First Technical Memorandum

5. In 2008, SEN issued the First TM to allocate the emission allowances for the emission years between 2010 and 2014. Under the First TM, the emissions of SO₂, NO_x and RSP from the power sector were capped at 25 120 tonnes, 42 600 tonnes and 1 260 tonnes respectively. The total emission allowances were distributed among the power plants operated by the two power companies based on their respective share of the quantity of electricity generation for local consumption, and updated not less than once every three years. To provide sufficient lead time for the power companies to adjust their operation, an advance notice of no less than four years would be given to them before any changes to the allocation of emission allowances arising from the regular updating to take effect. Also, not more than one percent of the total emission allowances for the power sector in respect of each of the specified pollutants was allowed for allocation to new electricity works.

Members' views on the First Technical Memorandum

6. When the First TM was discussed at the meeting of the Panel on 27 October 2008, some members questioned the bases upon which the emission allowances for SO₂ and NO_x were arrived at. They also urged the Administration to tighten control of RSP, which was the cause for many respiratory diseases in Hong Kong. Some other members were concerned that the two power companies would pass the costs to achieve the emission reduction targets (using cleaner fuels and installation of pollution abatement equipment) to consumers through increased electricity tariffs. Questions were also raised on the low emission allowances for new comers and efficacy of emission trading among power plants in Hong Kong and Guangdong.

7. Following the publication of the First TM in the Gazette on 7 November 2008, a subcommittee was set up to examine the TM. To allay

members' concern about including an expiry date in the First TM, the Administration acceded to the subcommittee's request to provide an undertaking in writing that a review on the First TM would be conducted within two years after it had come into operation. The report of the subcommittee (LC Paper No. CB(1)323/08-09) is hyperlinked in the **Appendix** for ease of reference.

Second Technical Memorandum

8. In the light of the review of the First TM, the Administration considered that there was scope to reduce the emission allowances for each of the electricity works of the two power companies for the emission years starting from 1 January 2015 through maximizing the use of the existing gas-fired generation units, and prioritizing the use of the coal-fired generation units that had been retrofitted with emission abatement equipment. The Administration therefore proposed to impose via the Second TM emission allowances for each of the electricity works of the two power companies in relation to the emission years from 1 January 2015 onwards. Under the Second TM issued in 2010, the emissions of SO₂, NO_x and RSP from the power sector were capped at 12 482 tonnes, 27 552 tonnes and 831 tonnes respectively, representing a respective tightening by 50%, 35% and 34% as compared to the First TM.

Members' views on the Second Technical Memorandum

9. The Panel held a meeting on 22 September 2010 to discuss the Second TM. While welcoming the tightening of emission allowances for power plants, some members pointed out that the capability of the two power companies to meet the emission caps would very much depend on whether they could make full use of their gas-fired generation units, and the timely availability of replacement natural gas to be delivered under the Memorandum of Understanding on Energy Co-operation. Given the volatility of the fuel market and Hong Kong's reliance on the import of natural gas, these members considered that a better fuel mix should be worked out to ensure a reliable supply of electricity taking into account the implications on electricity tariffs on the community at large.

10. Following the gazettal of the Second TM on 15 October 2010, a subcommittee was set up to examine the TM. At members' repeated request, the Administration agreed to amend section 2.5 of the Second TM and change the frequency of reviewing the TM to not less than once every two years. The report of the subcommittee (LC Paper No. CB(1)517/10-11) is hyperlinked in the **Appendix**.

Third Technical Memorandum

11 In reviewing the Second TM, the Administration considered it possible

to further tighten the emission caps for the power sector from 1 January 2017 onwards through the promulgation of the new Third TM. The Administration's assessment was that if both power companies could continue their efforts to use low emission coals as far as possible and upkeep the performance of their emission control devices, it should be possible to tighten the emissions caps stipulated in the Second TM. Furthermore, since there will be waste-to-energy ("WTE") facilities coming into operation in late 2013 and the power sector can generate electricity from WTE and renewable energy ("RE"), the Administration considered it appropriate for the Third TM to cater for the possible intake of RE and WTE. The electricity to be tapped from RE and WTE will be taken as for displacing the electricity generated from the coal-fired generation units.

12. The emission allowances for existing electricity works in 2017 (tonnes per year) with additional emission reduction measures are set out in the table below –

| | Emission allowances for existing electricity works in 2017 (tonnes per year) | | |
|---|--|--------------------------------|---------------|
| | SO ₂ | NO _x ^[@] | RSP |
| Hongkong Electric Co. Ltd. Lamma Power Station and Lamma Power Station Extension (mixed fuel) | 5 200 | 9 450 | 250 |
| Subtotal | 5 200 [-23%] | 9 450 [-6%] | 250 [-17%] |
| CLP Power Hong Kong Limited Black Point Power Station (gas-fired) | 1 440 | 4 140 | 110 |
| Castle Peak Power Station (coal-fired) | 3 757 [-12%] | 12 358 [-8%] | 389 [-7%] |
| Penny's Bay Gas Turbine Power Station (oil-fired) ^[#] | 2 | 2 | 1 |
| Subtotal | 5 199 [-9%] | 16 500 [-6%] | 500 [-6%] |
| Total | 10 399 [-17%] | 25 950 [-6%] | 750 [-10%] |

^[@] Expressed as nitrogen dioxide.

^[#] The figures in square brackets are the percent reduction comparing with the emission allowances stipulated in the Second TM.

13. As compared with the Second TM, the new Third TM will tighten the emission allowances for SO₂, NO_x and RSP by 17%, 6% and 10% respectively.

14. According to the Administration, achieving the proposed 2017 emission caps does not involve new capital investment by power companies. As for fuel cost, while the Third TM will not have any major impact on the fuel mix of power companies, actual fuel cost would be subject to international market price. The power companies will present their tariff assessment to the Administration in accordance with the prevailing regulatory mechanism under the Scheme of Control Agreement.

Panel's discussion on the Third Technical Memorandum

15. The review of the Second TM and the new Third TM were discussed by the Panel on 4 July 2012. At the meeting, members expressed concern about the cost implications of the Third TM on electricity tariff since the increased use of cleaner fuels (such as natural gas and low-emission coal) and renewable energy would come with a cost. They also urged the power companies to strive to enhance their emission performance through acquisition of more emission reduction facilities in order to further improve air quality.

Latest development

16. The Third TM was gazetted on 19 October 2012 and tabled in LegCo for negative vetting on 24 October 2012. The Administration's target is that the new Third TM shall commence before the end of 2012, thus providing at least four years' lead time for the revised emission allowances in respect of the specified pollutants in relation to the emission years from 1 January 2017 to take effect. At the House Committee meeting on 26 October 2012, members agreed that a subcommittee should be formed to examine the Third TM.

Relevant Papers

17. A list of relevant papers is in the **Appendix**.

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Emission Allowances in respect of Specified Licence**

List of relevant papers

| Council/ Committee | Date of meeting | Paper |
|--------------------------------|------------------------|---|
| Panel on Environmental Affairs | 27 October 2008 | <p>Information paper on "Technical Memorandum to Stipulate the Quantities of Emission Allowances for Power Plants" provided by the Administration (LC Paper No. CB(1)88/08-09(03)) http://www.legco.gov.hk/yr08-09/english/panels/ea/papers/ea1027cb1-88-3-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1)222/08-09) http://www.legco.gov.hk/yr08-09/english/panels/ea/minutes/ea20081027.pdf</p> |
| House Committee | 5 December 2008 | <p>Report of the Subcommittee on Technical Memorandum for Allocation of Emission Allowances in respect of Specified Licences (LC Paper No. CB(1)323/08-09)) http://www.legco.gov.hk/yr08-09/english/hc/papers/hc1205cb1-323-e.pdf</p> |
| Panel on Environmental Affairs | 22 September 2010 | <p>Information paper on "Review of the Technical Memorandum for Allocation of Emission Allowances in Respect of Specified Licences" provided by the Administration (LC Paper No. CB(1)2841/09-10(01)) http://www.legco.gov.hk/yr09-10/english/panels/ea/papers/ea0922cb1-2841-1-e.pdf</p> <p>Paper on Technical Memorandum for Allocation of Emission Allowances in respect of Specified Licence prepared by the Legislative Council Secretariat (updated background brief) (LC Paper No. CB(1)2841/09-10(02)) http://www.legco.gov.hk/yr09-10/english/panels/ea/papers/ea0922cb1-2841-2-e.pdf</p> <p>Minutes of special meeting (LC Paper No. CB(1)318/10-11) http://www.legco.gov.hk/yr09-10/english/panels/ea/minutes/ea20100922.pdf</p> |

| Council/ Committee | Date of meeting | Paper |
|--------------------------------------|------------------------|--|
| House Committee | 26 November 2010 | <p>Report of the Subcommittee on Second Technical Memorandum for Allocation of Emission Allowances in respect of Specified Licences (LC Paper No. CB(1)517/10-11))</p> <p>http://www.legco.gov.hk/yr10-11/english/hc/papers/hc1126cb1-517-e.pdf</p> |
| Panel on Environmental Affairs | 4 July 2012 | <p>Information paper on "Review of the Second Technical Memorandum for Allocation of Emission Allowances for Power Plants" provided by the Administration (LC Paper No. CB(1)2256/11-12(05))</p> <p>http://www.legco.gov.hk/yr11-12/english/panels/ea/papers/ea0704cb1-2256-5-e.pdf</p> <p>Paper on Technical Memorandum for Allocation of Emission Allowances in respect of Specified Licence prepared by the Legislative Council Secretariat (updated background brief) (LC Paper No. CB(1)2256/11-12 (06))</p> <p>http://www.legco.gov.hk/yr11-12/english/panels/ea/papers/ea0704cb1-2256-6-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1)2560/11-12)</p> <p>http://www.legco.gov.hk/yr11-12/english/panels/ea/minutes/ea20120704.pdf</p> |