

**Confirmed Minutes of the 172nd Meeting of
the Advisory Council on the Environment
held on 20 September 2010 at 2:30 pm**

Present:

Prof Paul LAM, JP (Chairman)
Prof CHAU Kwai-cheong, JP (Deputy Chairman)
Ms Teresa AU
Dr Dorothy CHAN, BBS
Mr Oscar CHOW
Prof FUNG Tung
Mr Michael JEBSEN, BBS
Mr Edwin LAU, MH
Ir Dr LO Wai-kwok, BBS, MH, JP
Dr MAN Chi-sum, JP
Dr Alfred TAM
Mr TSANG Kam-lam, JP
Prof WONG Ming-hung
Dr YAU Wing-kwong
Dr Ray YEP
Prof Ignatius YU
Mr Carlson K S CHAN, JP (Secretary)

Absent with Apologies:

Ms Betty HO
Prof Joseph LEE
Mr Michael LEE
Mr Simon WONG, JP

In Attendance:

Mr Edward YAU, JP	Secretary for the Environment
Ms Anissa WONG, JP	Permanent Secretary for the Environment
Mr C C LAY	Assistant Director (Conservation), Agriculture, Fisheries and Conservation Department (AFCD)
Mr C T LING	Assistant Director/Technical Services, Planning Department
Mr Eric CHAN	Administrative Assistant to Secretary for the Environment
Miss Linda CHOY	Political Assistant to Secretary for the Environment
Miss Teresa CHIU	Press Secretary to Secretary for the Environment
Ms Esther LI	Acting Principal Information Officer, Environmental Protection Department (EPD)

Ms Josephine CHEUNG	Chief Executive Officer (CBD), EPD
Mr Steve TSOI	Executive Officer (CBD), EPD
Miss Kim KWAN	Executive Manager (CBD), EPD

In Attendance for Agenda Item 3:

Miss Vivian LAU, JP	Deputy Secretary for the Environment, Environment Bureau
Miss Mary TSANG	Assistant Director (Cross-Boundary and International), EPD
Dr Shermann FONG	Senior Environmental Protection Officer (Cross-Boundary and International)5, EPD

Action

Agenda Item 1 : Confirmation of the draft minutes of the 171st meeting held on 14 June 2010

The draft minutes were confirmed without amendments.

Agenda Item 2 : Matters arising from the minutes of the 171st meeting held on 14 June 2010

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

Agenda Item 3 : Public Consultation on Hong Kong's Climate Change Strategy and Action Agenda
(ACE Paper 12/2010)

3. Miss Mary Tsang briefed Members on the key proposals regarding Hong Kong's Climate Change Strategy and Action Agenda. The Government proposed to adopt a voluntary carbon intensity reduction target of 50% to 60% by 2020 as compared with 2005 level through implementation of a package of mitigation measures. If the proposed target was achieved, it would represent a real reduction in greenhouse gas (GHG) emissions of 19% to 33% in absolute terms from the 2005 level. The Government also proposed a framework to implement options for Hong Kong to adapt to the inevitable impact of climatic changes. A three-month public consultation on the proposals had been launched starting from 10 September 2010.

4. A Member considered that the consultation document was well-presented in addressing the global challenge of climate change. In terms of target, he considered that the large range of the reduction target in GHG emissions from 19% to 33% was relatively vague and not satisfactory. Another Member considered the strategy forward-looking. She noted that the global target under the Copenhagen Accord was to reduce GHG emissions from the current level of 51 gigatons to about 44 gigatons by 2020. She considered that the proposed reduction in GHG emissions in the range of 19% to 33% for Hong Kong was in line with the global standard. She suggested setting sector-specific targets so that different sectors could make their share of contribution having regard to their unique circumstances and constraints. Moreover, it would be useful to lay down some intermediate targets in between the next ten years for achieving gradual improvements and maintaining the momentum towards the final target. It was also necessary to evaluate the overall increase in demand for energy against reduction in carbon emissions after implementing the measures.

5. Regarding the revamp of fuel mix for electricity generation under the action agenda, a Member considered that it would be useful to define more clearly the framework of energy policy for Hong Kong in the context of the national policy and local constraints. A Member noted that the proposed fuel mix would increase nuclear energy to 50% by 2020. He asked about the availability of concrete action plans to secure nuclear energy given the lead time required for building nuclear power plants. Another Member asked whether there were plans to construct new nuclear power plants in the vicinity of Hong Kong. The Chairman asked whether there was sufficient time for the infrastructure to be put in place for achieving the target in ten years' time.

6. Miss Vivian Lau explained that Hong Kong had been maintaining a good relationship with the Mainland in terms of energy co-operation. Under the Memorandum of Understanding on Energy Co-operation (MOU) signed in 2008, Hong Kong was able to secure the supply of natural gas from the Mainland to increase the share of natural gas in the fuel mix from 23% to about 40% by 2020. As regards nuclear energy, one of the local power companies had been investing and taking part in the management of Daya Bay Nuclear Power Plant through a joint venture. As part of national planning, a number of nuclear plants would be built in Guangdong Province at locations farther away from Hong Kong. This would provide a good opportunity for Hong Kong to discuss with the Mainland the scope of importing more nuclear energy. Necessary arrangements to be put

in place, such as power transmission networks, would be examined as a whole.

7. A Member asked about the availability of study reports on the use of nuclear energy for electricity generation. Miss Vivian Lau explained that most of the analysis on nuclear power was conducted in house. The Administration had provided relevant information in the consultation document. Another Member noted that while the United Nations' Intergovernmental Panel on Climate Change agreed in 2007 that nuclear power was considered as an effective GHG mitigation option, the Sustainable Development Committee of the UK rejected a plan for relying on nuclear energy for electricity generation in 2007. To allow Members to have a better understanding of the issue, he suggested the Administration to provide more information and conduct in-depth study on the pros and cons of using nuclear energy.

8. On the proposal to use less coal for electricity generation, a Member asked about actions in hand for the power companies to achieve the target having regard to constraints such as permitted returns under the Scheme of Control Agreement (SCA). Miss Vivian Lau explained that as a matter of Government policy, power companies were not allowed to build new coal-fired power plants since 1997. With a normal economic life of 25 to 35 years, most of the local coal-fired power plants would start to retire in phases in the run-up to 2020. The rest would also be completely retired by early 2030s. The power companies would have to identify alternative types of fuels in place of coal.

9. A Member enquired about the estimated increase in cost for switching to the proposed fuel mix. The general public would be concerned about the cost implications for a low carbon environment. Miss Vivian Lau explained that it was difficult to estimate the cost increase in absolute value at the present stage as certain key parameters were yet to be finalized pending further studies and discussion and the prices of different fuels would fluctuate over time. For illustrative purpose, the current unit price of nuclear electricity imported from the Mainland was about 50 cents/kWh. The power companies' current unit generation costs of coal-fired electricity were in the range of about 40 to 60 cents/kWh and gas-fired electricity in the range of about 70 to 90 cents/kWh. It was anticipated that the price of natural gas would be volatile and on the rising trend. Compared with natural gas, the price of nuclear power would be more stable and less expensive. Nonetheless, fuel costs were subject to market

fluctuation and future imported nuclear electricity prices would be subject to commercial negotiations.

10. A Member fully supported the drive in reducing GHG emissions. Noting that nuclear energy was relatively cheaper, more reliable and cleaner than natural gas, he asked the possibility of further increasing the proportion of nuclear energy beyond 50% in the fuel mix. Miss Vivian Lau explained that the key consideration in the energy policy was to uphold the principle of ensuring reliable, safe and efficient energy supplies at reasonable prices while minimizing environmental impacts. To ensure reliability of power supply, it was necessary to strike a reasonable balance in the fuel mix. The proposed fuel mix of about 50% nuclear energy and about 40% natural gas was considered appropriate.

11. A Member noted that there were heated debates on the suitability of nuclear energy for electricity generation in many countries. He considered that renewable energy (RE) should be further explored given the large-scale development of RE in the Mainland. A Member considered the proposal a bold and courageous step to tackle the challenge of climate change. He agreed that the action plans should focus on de-carbonizing. He asked about the possibility of importing RE from the Mainland, following the arrangement of importing natural gas and nuclear energy from the Mainland. Another Member asked about the possibility of further increasing the share of RE in the fuel mix. While there were plans to build more nuclear power plants in Guangdong, the management quality of these plants was still uncertain.

12. Miss Vivian Lau explained that the Administration supported a wider use of RE in Hong Kong. Its development in the local context was, however, hindered by natural constraints and geographical limitations. The proposed 3 to 4% of RE in the fuel mix was based on anticipated RE production in the local territory in the coming decade, in terms of wind energy and waste-to-energy. As regards regional cooperation, the Framework Agreement on Hong Kong/Guangdong Co-operation signed in April 2010 had provided a good basis for further co-operation in RE. The Administration would work closely with the Mainland authorities in this respect. At present showing, there was concern over the supply of RE resources in the vicinity of Hong Kong. There were limited hydro-electric resources in Guangdong and the scale of wind farms was very small. Regarding nuclear power plants, the Administration would explore the possibility of adopting the experience of Daya Bay Nuclear Power

Plant (where Hong Kong power companies were involved in investment and management) to enhance safety and reliability.

13. A Member asked about the way ahead in taking forward the fuel mix proposal after the consultation exercise and availability of a fall back option in case no agreement could be reached in the community. Miss Vivian Lau explained that under the SCA, certain procedures including the Executive Council's approval were required before local power companies were allowed to purchase electricity from outside Hong Kong or make investment beyond the current SCA which would expire in 2018. As regards fall back plans, there were not many options available given the fact that the building of coal-fired power plants had been banned, the supply of natural gas from the Mainland would be maximized and the development of RE was limited by geographical constraints. Efforts would be made to achieve a reasonable and practicable low carbon formula for the fuel mix.

14. A Member considered that the proposal laid down a solid foundation for tackling the long-term problem of climate change. He asked about the potential of having joint ventures through which Hong Kong could co-operate with the Mainland on the energy aspect.

15. Mr Edward Yau noted that the major focus of discussion in the community so far was on cost implications and nuclear energy. He highlighted that these concerns could be considered from a wider perspective. The climate change policy was not only an environmental policy, but also a social and economic policy affecting the livelihood of the general public and economic development. The policy would contribute towards China's effort to develop a low carbon economy. It also enabled Hong Kong to meet its obligation as an international city. The consultation document only outlined the overall policy direction and the implementation details had yet to be worked out. The community was encouraged to consider whether the policy was progressive enough for building Hong Kong into a low carbon city and whether the proposed action plans were practical and achievable within ten years. The time frame was to tie in with similar plans of other countries and the CPG. Moreover, it was important to develop partnership with the community to work towards the common goal in combating climate change. The action agenda involved behavioural change, waste-to-energy options and demand side measures. By building a greener city, Hong Kong as a leading financial centre could

demonstrate its commitment and contribution to international efforts in combating climate change, and at the same time enhance our competitiveness.

16. Mr Edward Yau further explained that in considering the fuel mix, the key objective was to suppress the use of fossil fuels, in particular coal, by expanding the use of cleaner non-fossil fuels, including RE and nuclear energy, which were proven, viable options. Efforts were being made to develop RE. The issue of nuclear energy could be considered from the local and regional perspective. The experience of Hong Kong's involvement in investing in and managing the Daya Bay Nuclear Power Plant had positively contributed towards the reliable supply of nuclear energy, which now accounted for about 23% of the local fuel mix. The national plan to build more nuclear plants in Guangdong would offer good opportunities for Hong Kong to explore the wider use of nuclear energy. We should also aim to strengthen the cooperation with the Pearl River Delta region by playing a pivotal role in transforming the region into a quality living area and positioning Hong Kong as the greenest city in the region.

17. A Member agreed to the direction of suppressing the use of fossil fuels for electricity generation. He was also pleased to note that maximizing energy efficiency was set as a key measure under the action agenda. He pointed out that energy conservation works in buildings could bring about substantial savings in the electricity bill. The community was increasingly aware of the benefits. He noted that under the Building Energy Efficiency Funding Schemes, more than 1,200 applications had been received since April 2009. He suggested that more efforts should be made to encourage single block buildings and rural villages to participate in building energy efficiency programmes. Another Member considered that the Government should set an example by adopting energy efficiency building codes and installing energy efficient devices in Government premises and public housing estates.

18. A Member enquired about the progress of constructing district cooling systems (DCS) which had been under discussion for some time. Miss Vivian Lau explained that tendering work for the first two phases of DCS for Kai Tak Development was underway. The Administration would then seek the approval of the Legislative Council of the funding arrangements.

19. As regards the proposed measure of turning waste to energy under the action agenda, a Member considered it necessary to accelerate the pace of building waste-to-energy facilities. He urged that the integrated waste management facilities (IWMF) be put in place in full operation as fast as possible rather than building it by phases. More organic waste treatment facilities should also be built. This would have the dual benefits of reducing GHG emissions and alleviating the problem of waste and burden on landfills. Miss Vivian Lau explained that the major problem in speeding up the construction of waste-to-energy facilities was not one of technical viability, but strong local opposition as residents in the vicinity of the proposed sites generally were against the idea. Efforts to build the first phase of the IWMF were in full swing. Together with energy converted from other waste treatments, it was anticipated that energy generated from waste would make up about 2% of the future fuel mix.

20. A Member asked about the possibility of generating energy from landfills as in some foreign countries, such as Sweden, which made very good use of waste in generating energy. Miss Mary Tsang explained that the Environmental Protection Department (EPD) had been tapping landfill gas from the strategic landfills currently for various purposes such as production of town gas. As for the restored landfills, the sites were restored for other land use purposes. The landfill gas that could be tapped from these restored landfills would gradually diminish to a very low level such that it was not economical to tap the gas for energy production.

21. On the transport sector, a Member noted that the transport sector accounted for about 18% of local GHG emissions. With the Government's plan to expand railway carrying capacity, the market share of railway in the transport sector would increase from 35% to 45%. By 2020, it was estimated that about 70% of residential units would be within 1 km of the railway stations. Nonetheless, with the improved accessibility and convenience, more tall buildings would be built along the railway network. This would inevitably impose pressure on building energy consumption. Thus, expanding the railway network should not be the only solution. Measures to improve other modes of public transport should be considered. Another Member asked whether there was any plan to phase out public vehicles using fuel standards of Euro III and below or to require the installation of proven emission reduction devices in public vehicles to reduce carbon emissions from public transport.

22. On marine traffic, a Member considered that mandatory requirements should be imposed on vessels for upgrading fuel standards having regard to the international standards.

23. A Member supported the overall strategy. Regarding the proposed measure of promoting the use of clean fuels for motor vehicles, such as biofuels, he urged the Administration to be cautious in the import of biofuels. While he supported making use of waste cooking oils for producing biodiesels locally, the sources of imported biofuels were in doubt. There were heated debates in overseas countries on the use of biofuels in the past decade as it involved ethical and environmental issues. The production of biofuels from cereals such as corn and rice was being criticized for giving rise to problems of food shortage and price increase. Some biofuels were produced by converting tropical rainforests to oil palm plantations. If biofuels were to be imported to Hong Kong, it was essential to ascertain information such as types, origins of production and life-cycle analysis. Experience in the United States and Brazil showed that heavy subsidy from the government was necessary to maintain the cost of biodiesels at a low level. He noted the proposal of blending petrol and diesel with 10% of ethanol and biodiesel respectively with a view to reducing the reliance on fossil fuels for motor vehicles. As the use of biofuels might affect vehicle performance, it might be necessary to make certain mechanical changes to the vehicles.

24. A Member noted that increasing forest coverage would be adopted by the Mainland as one of the measures to achieve the national target of reducing carbon dioxide (CO₂). He fully supported this option for adoption in Hong Kong which would also enhance biodiversity. He also suggested exploring the possibility of subsidizing the restoration of forest in degraded lands, including those in Guangdong area such as the upper course of Dongjiang River which supplied water to Hong Kong. Another Member suggested that incentives should be provided to conduct research and development to explore technologies of absorbing or reusing CO₂.

25. On education and public awareness, a Member stressed the importance of arousing public awareness on individual's responsibility to achieve the target. She considered that a mandatory and wider scale of waste separation at the level of individual household should be rolled out. Many overseas countries, such as Japan and Singapore, had launched household waste separation

on a mandatory basis. However, source separation in Hong Kong was still maintained at a voluntary stage. Another Member considered that it was important to convey a message to the general public that while clean energy was expensive to start with, it would result in savings in the longer term.

26. A Member considered that collaboration and participation of the entire community was the key to success. With the emergence of new concepts of fashionable lifestyle, there was potential for changing the mind set of the younger generation in the pursuit of a low carbon lifestyle. Another Member considered that it was crucial to convince the general public of the need to make conscious efforts for a change in value and culture by moving away from consumerism and accept the cost and inconvenience that might be incurred in leading a green lifestyle. Efforts would be required not only from the Administration, but also from every sector of the community to buy-in the proposed target and action agenda.

27. The Chairman summarized Members' views as follows –

- (a) the Council welcomed the issue of the consultation document setting out clear direction and proposals for Hong Kong's strategy and action agenda in tackling the unprecedented challenge of climate change in the global and national contexts. It was a bold move and forward-looking strategy;
- (b) the Council supported the proposed carbon intensity reduction target of 50% to 60% in the ten year's time frame and considered that some intermediate targets could be set to give the public a clearer picture of the action plan and recognition of their contributions to achieving the long-term target. Sector-specific targets could also be considered so that different sectors could make their share of contribution having regard to their unique circumstances and constraints;
- (c) the Council considered that the proposed mitigation measures were directed at the characteristics of the local GHG emissions and were strategically formulated to achieve carbon emission reductions. Besides tackling the supply side of energy resources, it was important to manage the demand side;

- (d) the Council considered that public education was of vital importance in mobilising concerted community-wide efforts in combating climate change, particularly in respect of a change in personal values, attitudes and behaviour in leading a low carbon lifestyle. Public engagement was necessary in rolling out energy efficiency schemes;
- (e) the Council considered that it was important to send a message to the public that while going low-carbon might involve costs and inconvenience at the early stage, it would generate economic opportunities for Hong Kong and bring about complementary benefits to the community in the longer term, such as cleaner air, savings in electricity tariff and alleviating pressure on the landfills;
- (f) the Council made the following suggestions in respect of the action agenda –
 - (i) striking a balance in revamping the fuel mix;
 - (ii) conducting more in-depth studies on the use of more nuclear energy for electricity generation;
 - (iii) increasing the use of RE and exploring the potential of importing RE;
 - (iv) further promoting building energy efficiency, in particular single block buildings and rural villages;
 - (v) accelerating the programme for building waste-to-energy facilities;
 - (vi) actively promoting household separation of waste;
 - (vii) exploring the case of mandating the retirement of public vehicles not meeting emission standards and the installation of emission reduction devices;
 - (viii) upgrading the fuel standards for marine vessels;
 - (ix) be cautious about the import of biofuels; and
 - (x) promoting greening and increasing forest coverage for reducing CO₂.

28. Mr Edward Yau agreed that one of the major challenges in pursuing the goal was public buy-in. It would be difficult to ensure a more balanced discussion on the issues from a broader perspective for Hong Kong to fulfil its

obligation as an international city in combating climate change. On the other hand, it would be easy for the public to focus just on one or two issues such as cost implications and nuclear energy. Another major challenge was the difficulty for the public to recognize low carbon economy as a major policy goal, while it was easier for them to visualize air pollution problems. It was crucial for Hong Kong and the world as a whole to sustain future development by pursuing a low carbon lifestyle instead of focusing only on remedial mitigation measures for tackling air pollution problems. The development of a low carbon economy was not only an environmental policy but the core principle of policies involving many bureaux and departments. It was not only a Government policy but also called for commitment of every sector of the community.

29. Mr Edward Yau said that another challenge was to encourage people to look at both sides of the coin. While recognizing there would be cost implications, it was also important to realize the benefits of carbon reduction and the risks of not acting early. Moreover, the opportunity should be taken to leverage regional or international co-operation in a proactive manner. It was the national strategy of the CPG to reduce carbon intensity from both the environmental and development perspectives. Hong Kong should stay in the forefront and tap the potential of developing a low carbon economy. Hong Kong had to work in close collaboration with the Mainland in order to achieve the aggressive target. Public support was crucial for Hong Kong to benchmark with major developed cities in terms of emission reduction targets and position itself, in the context of the Pearl River Delta, as the greenest region of China.

Agenda Item 4: Any Other Business

EIA report of non-selected projects

42. The Chairman of EIA Subcommittee reported that since the last Council meeting, the EIA Subcommittee had received the Executive Summaries of the EIA reports on “Installation of Submarine Gas Pipelines and Associated Facilities from To Kwa Wan to North Point for Former Kai Tak Airport Development” submitted by The Hong Kong and China Gas Company Limited and “Kwun Tong Line Extension” submitted by the MTR Corporation Limited. These two projects were not selected by the EIA Subcommittee for discussion. The hardcopies of Executive Summaries of the EIA reports were circulated to EIA

Subcommittee Members and relevant hyperlinks were circulated to non-EIASC Members.

Tentative items for discussion at the next meeting

43. The agenda was being compiled. Members would be informed in due course.

Agenda Item 5 : Date of next meeting

44. The next meeting was scheduled for 11 October 2010.

**ACE Secretariat
September 2010**