

# 立法會 *Legislative Council*

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## **Report of the Panel on Environmental Affairs for submission to the Legislative Council**

### **Purpose**

This report gives an account of the work of the Panel on Environmental Affairs (the Panel) during the Legislative Council (LegCo) session 2011-2012. It will be tabled at the meeting of the Council on 11 July 2012 in accordance with Rule 77(14) of the Rules of Procedure of the Council.

### **The Panel**

2. The Panel was formed by a resolution passed by the Council on 8 July 1998 and as amended on 20 December 2000, 9 October 2002, 11 July 2007 and 2 July 2008 for the purpose of monitoring and examining Government policies and issues of public concern relating to environmental and conservation matters. The terms of reference of the Panel are given in **Appendix I**.

3. The Panel comprises 16 members, with Hon CHAN Hak-kan and Hon Audrey EU elected as Chairman and Deputy Chairman respectively. The membership list of the Panel is in **Appendix II**.

### **Major Work**

#### Air

4. The deteriorating air quality remained high on the agenda of the Panel. In view of the far-reaching implications of air pollution on public health, quality of life and long-term development of Hong Kong, members agreed that the Subcommittee on Improving Air Quality (the Subcommittee) set up under the

Panel should continue to enable more focused discussion on the Administration's efforts in addressing air pollution. The Subcommittee held six meetings in the current legislative session to discuss the review of the Air Quality Objectives, retrofitting of separate air-conditioning system for vehicles while engines were switched off, trial on retrofitting of selective catalytic reduction device for franchised bus fleet, and measures to improve the liquefied petroleum gas (LPG) services. The trades had been invited to present their views on the latter subject.

5. Motor vehicles are the major source of roadside pollution which has a direct impact on the people in Hong Kong. To improve roadside air quality, the Administration has tightened the standards for motor vehicle fuels and emissions of newly registered vehicles, introduced LPG vehicles to replace diesel taxis and light buses, mandated all pre-Euro diesel vehicles to be retrofitted with particulate reduction devices, upgraded the standard and test procedures for vehicle smoke emissions, and launched incentive schemes to encourage the use of environment-friendly vehicles and replacement of pre-Euro III diesel commercial vehicles. As a result, the levels of sulphur dioxide (SO<sub>2</sub>) and respirable suspended particulates (RSP) registered at roadside air quality monitoring stations have been reduced by 63% and 34% respectively between 1999 and 2010. However, the level of nitrogen dioxide (NO<sub>2</sub>) has increased by 20% over the same period, causing a threefold increase in the number of days with "very high" Air Pollution Index (API) from 43 days in 2005 to 139 days in 2010. Roadside NO<sub>2</sub> is emitted directly by vehicle (i.e. primary emission) or formed after the further oxidation of the nitric oxide emitted also by vehicles (i.e. via a secondary formation route involving volatile organic compounds and ozone).

6. Emissions from petrol and LPG vehicles (particularly LPG taxis and light buses) account for over 40% of vehicular NO<sub>2</sub> emissions at busy corridors. These vehicles rely on catalytic converters to reduce emissions. However, these catalytic converters will be worn out over use and needs to be replaced from time to time. If not, the emissions of these vehicles will increase by at least 10 times. In the case of LPG taxis and light buses, the replacement needs to be made around every 18 months. It is estimated that the catalytic converters of some 80% and 45% of road running LPG taxis and light buses respectively have been worn out. To further improve roadside air quality, the Administration has launched a two-month stakeholder consultation on 15 November 2011 on the proposal to control excessive emissions of petrol and LPG vehicles using roadside remote sensing equipment and advanced emission tests, and to set aside \$150 million to provide a one-off subsidy for vehicle owners to replace the catalytic converters and associated components of their LPG taxis and light buses.

7. The proposal to control emissions from petrol and LPG vehicles was discussed at the Panel meeting on 28 November 2011 while the outcome of consultation on 27 February 2012. Noting that the LPG taxis replacement scheme had been implemented for almost 10 years, some members pointed out that many LPG taxis and light buses were approaching the end of their service lives. With the emergence of newer and more environment-friendly vehicles (such as electric vehicles), these members held the view that LPG taxis and light buses would be eventually phased out. Therefore, it might not be worthwhile to provide a one-off subsidy for owners to replace the catalytic converters and associated components of their LPG taxis and light buses. Some other members were concerned about the adequacy of the funding of \$150 million to replace the catalytic converters and associated components of the existing fleet of 18 000 LPG taxis and 3 000 LPG light buses. In view of the high estimated replacement cost of \$5,000 to \$7,000 and the limited service life of 18 months of a catalytic converter, these members were concerned that owners of LPG taxis and light buses might have a hard time in replacing their catalytic converters on a regular basis, particularly without the one-off subsidy. Given that catalytic converters had to be replaced on a regular basis, there was a need for the Administration to ensure the availability of sufficient number of vehicle repair workshops to provide replacement services. Efforts should also be made to encourage participation of small and medium-sized repair workshops in the tender exercise for the provision of replacement services to prevent monopolization. The relevant funding proposal was subsequently approved by the Finance Committee on 13 April 2012.

8. Franchised diesel buses are another major source of roadside air pollution. To reduce emissions from franchised buses, the Administration proposes to fully subsidize the five franchised bus companies to purchase a total of 36 single-deck electric buses (including 28 battery-electric buses and eight supercapacitor buses) and related charging facilities (including installation cost) for trial run on different routes. The proposed trial aims to ascertain the readiness of electric buses to take up the role of conventional diesel buses in terms of technical feasibility, operational feasibility and financial affordability. The trial will help the franchised bus companies gather first-hand experience and knowledge for the possible wider application of electric buses in their bus fleet. The trial can also encourage electric bus manufacturer to provide suitable buses to meet the needs of Hong Kong market.

9. The proposal for funding the five franchised bus companies to purchase 36 electric buses and related charging facilities for trial in Hong Kong was discussed at the Panel meeting on 28 May 2012. Panel members generally welcomed the proposed trial, which in their views should have been implemented earlier. Some members enquired whether the franchised bus companies were required to replace the more polluting diesel buses with electric

ones if the trial was proved to be successful and if so, the plan and time frame for the replacement programme. To encourage early replacement of old and polluting diesel buses, consideration should be given to imposing an emission cap on each of the five franchised bus companies.

10. Hong Kong has been tightening motor vehicle fuel and emission standards with reference to international developments and when compliant fuels and vehicles can be made available to the local market. With the approval of LegCo, Euro IV emission standards have been adopted for newly registered vehicles since January 2006. The specifications of motor vehicle diesel and petrol were tightened to Euro V standards in July 2010 to further reduce vehicular emissions and pave way for the introduction of Euro V vehicles to maximize their environmental benefits. As vehicle suppliers have confirmed that they can supply Euro V vehicles for all vehicle classes by 1 June 2012 (except for light goods vehicles or design weight not more than 3.5 tonnes which will only be available by 31 December 2012), the Administration has proposed to amend the Air Pollution Control (Vehicle Design Standards) (Emission) Regulations to tighten the statutory vehicle emission standards for all newly registered motor vehicles to Euro V level on 1 June 2012, except for those of design weight not more than 3.5 tonnes which will be tightened on 31 December 2012.

11. The proposal to tighten the statutory emission standards for newly registered vehicles to Euro V level was discussed at the Panel meeting on 21 December 2011. While supporting the proposal, some members enquired about the cost-effectiveness of electric, hybrid and Euro V vehicles, as well as the efforts to encourage early replacement of polluting vehicles. Given the lukewarm response to the incentives schemes to encourage replacement of polluting vehicles, some other members suggested that financial disincentives (such as increasing the licence fees) should be introduced to discourage owners to continue using their aged vehicles. Consideration should also be given to providing a tax rebate for scrapping of vehicles aged 10 years or less, with a view to effectively reducing the number of aged and polluting vehicles on the roads as in the case of Singapore, Japan and Taiwan. To promote the use of environment-friendly vehicles, there was a need to enhance the maintenance the repair standard through provision of proper training.

12. Apart from road vehicles, non-road mobile machinery (NRMM)<sup>1</sup> contributes to about 7% and 11% of the local emissions of nitrogen oxide (NO<sub>x</sub>) and RSP respectively. There are about 13 500 units of NRMM operating in

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<sup>1</sup> Non-road mobile machinery includes mobile machines, transportable industrial equipment and non-road vehicles powered by an internal combustion engine used primarily off the road. These devices are widely used in airports, container terminals and construction sites.

Hong Kong, and their estimated average age and service life are about eight years and 14 years respectively. At present, NRMMs are neither required to comply with statutory emission standards or subject to any legislative air pollutant emission control, except that they must not cause air nuisance and the diesel-driven ones must use diesel with sulphur content not higher than 0.005%. Having regard to the impacts of emissions from NRMMs, the Administration put forth in May 2010 for stakeholder consultation a proposed scheme to control emissions from MRMMs imported into Hong Kong (except those for re-export) or manufactured locally for sale, lease or use on the Hong Kong market. Under the proposed control regime, importers must obtain approval from the Environmental Protection Department (EPD) regarding emission compliance<sup>2</sup> before importing NRMMs (except those for re-export). The same will apply to local manufacturers before placing NRMMs for sale, lease of use on the local market. Each piece of NRMM (except those for re-export) shall bear a durable and visible engine emission information label for identification. The labelling requirement will not be retrospectively applied to NRMMs imported or placed on the market before the implementation of the proposed control. The proposal was discussed by the Subcommittee in May 2010.

13. In the light of the Subcommittee's views and the outcome of stakeholder consultation, the Administration has revised the proposal such that all NRMMs (either new or second-hand) to be sold or leased for local use will have to meet the specified emission standards and be approved by EPD. NRMMs approved by EPD for local use will be properly labelled. Existing NRMMs in use before the introduction of the control regime will be exempted from the new requirements but they will have to be properly labelled for easy identification. The Administration will also specify clearly which activities with the possible use of NRMMs (i.e. specified activities) will be subject to the proposed control. The Administration has further consulted the stakeholders on the revised proposal, and the consultation ended on 20 July 2011.

14. The revised proposal was discussed at the Panel meeting on 27 February 2012. While there was a general support for the need to control emissions from NRMMs, some members held the view that the proposed control should not only apply to new NRMMs but also to existing NRMMs. Noting that legislative amendments would be required to implement the control regime, these members opined that opportunity should be taken to include a time frame within which the existing NRMMs should be phased out. Consideration should also be given to requiring existing NRMMs to undergo regular tests to ascertain their emission performance, similar to that applied to vehicles. This would ensure that NRMMs in use would meet the emission

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<sup>2</sup> Emission compliance means meeting the relevant emission standards, which are broadly in line with the standards of the European Union, the United States and Japan.

compliance requirements, and encourage early replacement of polluting NRMMs.

15. While land-based emissions have been reduced as a result of various efforts taken since 1990, SO<sub>2</sub>, RSP and NO<sub>x</sub> emissions from vessels have been increased by 54%, 41% and 4% respectively due to the increase in vessel arrival numbers increased by 57% to 76% over the same period. Vessels have become one of the major local air pollution sources, being the largest and second largest emitter of RSP and SO<sub>2</sub> after power plants. The impacts of emissions from vessels are particularly discernable at locations near the Kwai Chung container terminals where ocean going vessels (OGVs) berth and in places close to their routes. To control emissions from the marine sector, the Chief Executive announced in the 2011 Policy Address that the Administration will explore with governments of Guangdong, Shenzhen and Macao the feasibility of requiring OGVs to switch to low-sulphur fuel while berthing at ports of Hong Kong and the Pearl River Delta (PRD), setting up an Emission Control Area (ECA) in PRD water over the longer term, and upgrading the standard for local marine fuel supply in collaboration with the relevant trades to reduce emissions from vessels.

16. The proposal was discussed at the Panel meeting on 21 December 2011. Given the impact of emissions from vessels and the fact most OGVs should have been equipped for fuel switch at berth, some members suggested that the mandatory fuel switch at berth should be implemented in Hong Kong first, without awaiting the outcome of discussion with governments of Guangdong, Shenzhen and Macao. Some other members however opined that the shipping trade would not support the proposed fuel switch at berth if it was only implemented in Hong Kong lest this would undermine Hong Kong's competitiveness as OGVs might choose not to berth in Hong Kong. The proposal, if implemented, should be on a regional basis. These members also pointed out that the two-year Fair Winds Charter launched by the Hong Kong Liner Shipping Association on 1 January 2011 to encourage OGVs to voluntarily switch to use low-sulphur fuel while at berth in Hong Kong would be difficult to continue beyond the two-year period in the absence of financial support from the Administration, particularly when the shipping business was on the decline in recent years. By the same token, the proposal to control emissions from vessels could not be successfully implemented without the assistance from the Administration. Therefore, the Panel welcomed the Administration's proposal to introduce an incentive scheme to reduce by half the port facilities and light dues charged on OGVs using low sulphur fuel when at berth in Hong Kong waters.

## Climate change

17. In recent years, the issue of climate change has come to the forefront of sustainable development agenda of many nations and cities as well as the international agenda for co-operation. Greenhouse gas (GHG) is widely recognized as the primary cause of climate change. GHG affects the absorption, scattering and emission of radiation within the atmosphere and at the earth's surface. The global increases in GHG concentration due to human activities (such as use of fossil fuels and change in land use) are raising the global temperature to artificially high levels and altering the nature climate cycle.

18. In September 2010, the Administration conducted a public consultation to collect views on Hong Kong's climate change strategy and action agenda for the coming decade, including the proposed target of reducing carbon intensity by 50% to 60% by 2020 when compared with 2005 as well as a series of possible supply-side options and demand-side measures to help achieve the target. As some 90% of electricity supply in Hong Kong, is consumed by buildings (accounting for about 60% of GHG emissions in Hong Kong), there is a strong case for targeting major building user groups (including residential, office, retail and catering sectors) for territory-wide reduction in energy consumption and carbon emission. In August 2011, the Council for Sustainable Development issued an Invitation for Response (IR) document entitled "Combating Climate Change: Energy Saving and Carbon Emission Reduction in Buildings" for a four-month public engagement exercise to impart information and initiate public dialogue on the 11 areas of action categorized under "systemic enhancement" and "facilitation of behaviour change".

19. The IR document was discussed at the Panel meeting on 24 October 2011. The Panel generally agreed to the need to improve energy efficiency of buildings. However, some members were concerned about the low application rate under the BEAM Plus certification system (which was used to rate the environmental performance of new and existing building types in Hong Kong), possibly due to the voluntary nature of the system. To this end, the Administration was urged to step up communication with developers to promote the merits of green building certification and relevant rating standards, as well as take the lead in applying the certification system for its buildings. There was also a need for legislation to control building energy efficiency. Some other members pointed out the need to restructure the existing electricity tariff to provide the needed incentives to facilitate behavioral change and achieve energy savings. Consideration should be given to opening up the electricity market to enhance competition. These members also opined that instead of adopting a progressive voluntary target to reduce carbon intensity by 50% to 60% by 2020, a more pragmatic approach was for the Administration to

set a target to reduce total carbon emission and work towards this target.

## Waste management

### *Management of municipal solid waste*

20. In December 2005, the Administration published "A Policy Framework for the Management of Municipal Solid Waste (2005-2014)" (Policy Framework), which sets out a comprehensive strategy consisting of a series of proven policy tools and measures to tackle the waste problem ahead, and to achieve the targets of waste avoidance. The management of municipal solid waste (MSW) for the next decade from 2005 to 2014 would place emphasis on community participation and the "polluter-pays" principle. In January 2011, the Administration announced an action agenda on the implementation of initiatives that would help achieve a sustainable waste management solution for Hong Kong, using the Policy Framework as the basis. The agenda lists out the actions to tackle the imminent waste problem in Hong Kong under a three-pronged approach viz. strengthening waste reduction at source, introduction of modern treatment facilities, and timely extension of landfills.

21. The Panel held two meetings on 26 March 2012 to receive views from deputations (including professional institutes, green groups, political parties, resident associations etc.) on the progress of waste reduction and recycling initiatives under the action agenda, as well as the funding proposals for the Integrated Waste Management Facilities (IWMF) and three landfill extension projects. The Panel note that the vast majority of the over 100 deputations (particularly green groups and affected residents) were opposed to the proposed IWMF and landfill extension having regard to the possible impacts on the environment. There was a general consensus that more should be done to reduce and recycle waste.

22. When the funding proposals were discussed at the Panel meeting on 20 April 2012, members were disappointed that many measures (including those related to waste recycling/reduction, producer responsibility schemes (PRS), MSW charging, and landfill disposal ban) pertaining to the Policy Framework had yet to be implemented. Noting that the Chief Executive-elect (CE-elect) had stated at a open forum that waste incineration might not be necessary and that waste reduction and recycling would be the way forward for resolving the waste problem, members considered it necessary for the current term of Government to ascertain whether the new term of Government would support the existing waste management policy, particularly on the need for incineration. They were also opposed to the reliance on landfills for waste disposal in view of the associated environmental nuisances, as well as the long lead time and cost incurred from restoration of landfills. Panel members stressed the need for a

holistic package of waste management measures (including waste reduction, separation and recycling) should be worked out with waste incineration as a last resort. Given the many uncertainties (including the interface between the current and new term of Government, the need for betterment for the obnoxious facilities etc.), members did not support the submission of the proposals for consideration by the Public Works Subcommittee.

### Sewage

23. The Panel had considered a number of sewerage projects. While agreeing that these projects should be expedited to improve the environment and to create job opportunities for local workers, members stressed the need to ensure proper connections to the public sewerage by village houses as otherwise the efforts made in improving the sewerage network would be futile.

### Nature conservation

24. To protect the local biological diversity from possible adverse impacts arising from the trans-boundary movement of genetically modified organisms (GMO)<sup>3</sup>, the Genetically Modified Organisms (Control of Release) Ordinance (Cap. 607) was enacted to give effect to the Cartagena Protocol on Biosafety under the Convention on Biological Diversity, and to control the import and export of GMOs as well as their release into the environment. To keep track of the prevalence of GMOs in the territory, the Administration has been conducting surveys for the presence of GMOs in various imported and locally grown crop produce since 2008. The survey results reveal that most of the crop produce examined are non-transgenic. However, about 30% of imported papaya fruits obtained from the local markets and about 50% of home-grown/locally produced papayas are found to be genetically modified. Given the prevalence of papaya growing in Hong Kong, the Administration has conducted a risk assessment to ascertain the possible adverse effect of genetically modified (GM) papaya on the conservation and sustainable use of biological diversity in the local environment. Based on the risk assessment, it is concluded that GM papaya is unlikely to pose any adverse biosafety effect on the biological diversity (mainly because papaya is an exotic species with no close relatives in Hong Kong).

25. As the continued planting of GM papaya by the general would have no adverse effect on the local biological diversity, the Administration considers it logical and sensible to exempt all types of GM papaya so that any member of the public who wants to grow or maintain GM papaya will not be subject to threats of enforcement. The proposal to exempt GM papayas and GMO

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<sup>3</sup> Genetically modified organism refers to any living organism that possesses a novel combination of genetic material obtained through the use of modern biotechnology.

contained in live recombinant veterinary vaccine was first discussed at the Panel meeting on 28 November 2011. The Panel generally supported the proposed exemption of the latter. However, some members had expressed reservation on the proposed exemption of all types of GM papayas, including new varieties of GM papayas to be developed in future. These members pointed out that as the effects of new GM papayas on the biological diversity of local environment were unknown, the proposed blanket exemption would have safety implications and risks. Instead, more specific provisions on the exemption of GM papayas should be set out in the relevant subsidiary legislation. Consideration should also be given to imposing a labelling requirement for GM papayas.

26. In response to comments from the Panel and some interested groups, the Administration had further consulted relevant parties and revised the exemption arrangement to exempt GM papayas from the application of section 5 of the Cap. 607, and to exempt two commercialized varieties of GM papaya from the application of section 7 of Cap. 607. The revised proposal was discussed at the Panel meeting on 26 March 2012. Some members remained concerned about the potential biological risk of existing and new varieties of new GM papayas to the local biological diversity. Instead of exempting all varieties of GM papaya from the application of section 5 of Cap. 607, these members considered it more prudent for the Administration to include in the relevant subsidiary legislation a schedule of GM papayas to be exempted such that the schedule could be updated as and when necessary.

27. The relevant Exemption Notice was introduced into LegCo on 2 May 2012 and a subcommittee was set up to scrutinize the subsidiary legislation.

#### Environmental impact assessment

28. In March 2012, the Chief Executive-in-Council approved in-principle the recommendation of the Airport Authority Hong Kong (AAHK) to adopt the three-runway system as the future development option for the Hong Kong International Airport (HKIA) for planning purpose. AAHK should proceed with the planning related to the development of the third runway, which includes specifically the statutory environment impact assessment (EIA), the associated design details, and the financial arrangements. Upon completion of the planning work, AAHK should report to the Administration which will make a final decision on whether to proceed with the implementation of the three-runway system.

29. At the joint request of nine environmental groups, the Panel held a meeting on 24 April 2012 to discuss the environmental impacts associated with the development of the three-runway system under the HKIA Master Plan 2030.

The relevant environmental groups were also invited to express their views. The Panel noted that there was a general consensus among environmental groups that social return on investment (SROI) assessment and strategic environment assessment (SEA) should be conducted before EIA to ascertain the social and environmental costs associated with the three-runway system. Given the scale of the third runway project and the many infrastructural projects being/to be carried out at Lantau (notably the Hong Kong-Zhuhai-Macao-Bridge and the proposed IWMP), members stressed that an EIA on the cumulative impact rather than the standalone effect of the third runway should be conducted. A scientific and objective approach should also be adopted to assess the threshold for tolerance of environmental impact of development projects since not all environmental impacts could be mitigated. As a consolidated view of the Panel, members passed a motion demanding AAHK to conduct environmental studies on the third runway project, including SEA, SROI assessment and carbon audit, in order to protect the environment of Hong Kong and the areas in its vicinity.

#### Others

30. The Panel also discussed the consultation on "Initial Proposals for the Regional Cooperation Plan on Building a Quality Living Area", and the proposal for banning all forms of asbestos.

31. From October 2011 to June 2012, the Panel held a total of 12 meetings.

**Legislative Council**

**Panel on Environmental Affairs**

**Terms of Reference**

1. To monitor and examine Government policies and issues of public concern relating to environmental matters (including those on energy), conservation and sustainable development.
2. To provide a forum for the exchange and dissemination of views on the above policy matters.
3. To receive briefings and to formulate views on any major legislative or financial proposals in respect of the above policy areas prior to their formal introduction to the Council or Finance Committee.
4. To monitor and examine, to the extent it considers necessary, the above policy matters referred to it by a member of the Panel or by the House Committee.
5. To make reports to the Council or to the House Committee as required by the Rules of Procedure.

**Legislative Council  
Panel on Environmental Affairs**

**Membership list for 2011-2012 session**

<b>Chairman</b>	Hon CHAN Hak-kan
<b>Deputy Chairman</b>	Hon Audrey EU Yuet-mee, SC, JP
<b>Members</b>	Hon James TO Kun-sun Hon WONG Yung-kan, SBS, JP Hon Miriam LAU Kin-yee, GBS, JP Hon Andrew CHENG Kar-foo Hon LEE Wing-tat Hon Jeffrey LAM Kin-fung, GBS, JP Hon CHEUNG Hok-ming, GBS, JP Prof Hon Patrick LAU Sau-shing, SBS, JP Hon KAM Nai-wai, MH Hon Cyd HO Sau-lan Hon Starry LEE Wai-king, JP Hon CHAN Kin-por, JP Hon IP Wai-ming, MH Hon Tanya CHAN Hon Albert CHAN Wai-yip (up to 24 October 2011)
	(Total : 16 Members)
<b>Clerk</b>	Miss Becky YU
<b>Legal Adviser</b>	Miss Kitty CHENG
<b>Date</b>	24 October 2011