

# LCQ19: Reduction of air pollutants emitted by navigation

Following is a question by the Hon Chan Hak-kan and a written reply by the Secretary for the Environment, Mr Wong Kam-sing, in the Legislative Council today (February 27):

Question:

According to the 2016 Hong Kong Air Pollutant Emission Inventory Report published by the Environmental Protection Department, among the emission sources of the various types of pollutants, navigation emitted the largest quantities of pollutants in terms of sulphur dioxide, nitrogen oxides, respirable suspended particulates and fine suspended particulates, etc. Regarding the reduction of air pollutants emitted by navigation, will the Government inform this Council:

(1) of the emissions of various types of air pollutants in each of the past two years, with a breakdown by emission source;

(2) of the respective (i) numbers, (ii) average ages and (iii) types of the marine propulsion systems of the vessels of various licensed ferry operators in each of the past three years;

(3) of the respective (i) numbers, (ii) average ages and (iii) types of marine propulsion systems of the vessels of various government departments in each of the past three years;

(4) as the Air Pollution Control (Fuel for Vessels) Regulation (Cap 311AB) provides that from January 1 this year, all vessels (except for vessels of specified types) are required to use low sulphur marine fuel within Hong Kong waters, whether it has assessed the effect of the implementation of such a requirement on improving the air quality in Hong Kong;

(5) given that the Government has injected \$300 million to set up the Pilot Green Transport Fund (the Fund) to subsidise the testing of green innovative technologies applicable to the public transport sector and goods vehicles, of the number of cases in which the Fund provided subsidies in the past three years for innovative technologies used by ferries and the amounts involved, as well as the respective percentages of such figures in the relevant totals;

(6) as some members of the transport trade have relayed that the parts and components of water transport carriers are generally more expensive than those of road transport carriers, whether the Government will raise the Fund's subsidy caps for the innovative technologies used by ferries; if so, of the details; if not, the reasons for that;

(7) given that the Government has implemented a subsidy programme in recent

years to assist the transport trade in phasing out pre-Euro IV diesel commercial vehicles, whether the Government has any plan to introduce a similar programme in respect of navigation to phase out vessels with high pollutant emissions; if so, of the details and timetable; if not, whether it will introduce the relevant measures;

(8) given that the retirement age for franchised buses is 18 years, whether the Government will stipulate a retirement age for licensed ferries; if so, of the details; if not, the reasons for that;

(9) whether it will take the proportion of green vessels in the total number of vessels of a ferry operator as one of the considerations when vetting and approving applications for service licence for ferry routes; if so, of the details; if not, the reasons for that; and

(10) as some licensed ferry operators have indicated that the existing power supply facilities at piers fail to meet their needs on switching to the use of electric ferries, whether the Government will consider providing subsidies for operators to upgrade such facilities; if so, of the details; if not, the reasons for that?

Reply:

President,

My reply to the questions raised by the Hon Chan Hak-kan is as follows:

(1) The Environmental Protection Department (EPD) compiles the Hong Kong Air Pollutant Emission Inventory every year to analyse the distribution and trends of major air pollution sources in Hong Kong. While the emission inventories for 2017 and 2018 are still under preparation, those for 2015 and 2016 setting out the emissions of major air pollutants with a breakdown by emission sources are at Annex 1.

(2) According to the information provided by the Transport Department (TD), there are currently 13 licensed ferry operators providing regular passenger ferry services and dangerous goods vehicular ferry services. The number of vessels of various ferry operators, the average ages and types of propulsion system of their vessels during 2016 to 2018 are set out at Annex 2.

(3) According to the information provided by the Marine Department (MD), the number of vessels of various government departments, the average ages and types of propulsion systems of their vessels during 2016 to 2018 are set out at Annex 3.

(4) The Air Pollution Control (Fuel for Vessels) Regulation (Cap 311 sub leg AB) (the Regulation) has entered into force on January 1, 2019. Vessels are required to use compliant fuel, including low sulphur marine fuel with sulphur content not exceeding 0.5 per cent, liquefied natural gas or any other fuel approved by the Director of Environmental Protection, irrespective

of whether they are sailing or berthing in Hong Kong waters. It is anticipated that the implementation of the Regulation will reduce about 6 300 tonnes of sulphur dioxide (SO<sub>2</sub>) and 710 tonnes of respirable suspended particulates (RSP) from marine vessels in 2020, compared with 2015 emission levels.

(5) From 2016 to 2018, the Pilot Green Transport Fund (the Fund) approved two trials for testing out diesel-electric propulsion system (note) for ferry at a total amount of \$6 million, accounting for around 3 per cent of the total number of trials approved and about 10 per cent of the funding approved during the said period.

(6) According to the current rules of the Fund, the amount of subsidy for conducting engine retrofit or testing alternative-fuel engines at ferries is capped at \$3 million per device/engine, which is higher than the cap of \$1.5 million per device/engine for retrofitting or converting in-use vehicles with after-treatment emission reduction devices or fuel saving devices. It is stated in the 2018 Policy Address that the Government will review the scope of the Fund with a view to facilitating the transport sector's wider use of green innovative transport technologies. To this end, EPD is conducting the review along the following directions:

(i) while the current conditions for approving subsidy for the trials (i.e. trials of technologies that stand a good chance of coping with local operational requirements and can be adopted by relevant transport sectors for wider use upon successful trials) should be retained, we would review if improvements could be made in various areas including the scope of the subsidy, eligibility for application, subsidy levels, limits on applications and terms for subsidy; and

(ii) for technologies proven upon trials to be mature enough for local application, ways should be explored to encourage their wider use by the transport sectors (for instance, whether the sectors should be subsidised to procure and not just try out such products). Specifications and operational parameters for these technologies should also be set.

(7) The marine transport industry encompasses different types of vessels with different designs, operation modes as well as business models. The service life of vessels may differ greatly and therefore, it is not appropriate to phase out old vessels to reduce emissions of pollutants by adopting a similar programme for phasing out aged diesel commercial vehicles.

Regarding measures to reduce marine emissions, the Government has mandated ocean going vessels, which account for 95 per cent and 68 per cent of the emissions of SO<sub>2</sub> and RSP respectively from the marine sector, to use low sulphur fuel while at berth at Hong Kong waters since July 1, 2015, making Hong Kong the first port in Asia to mandate the fuel switch requirement. On January 1, 2019, we implemented a new regulation requiring all vessels to use compliant fuel within Hong Kong waters, in order to further reduce their emissions (see reply (4)). In controlling emissions from local vessels, a statutory cap of the sulphur content of locally supplied

marine light diesel at 0.05 per cent had been imposed since April 1, 2014, which was a 90 per cent reduction as compared with the sulphur content of previously supplied marine light diesel. This measure can reduce about 3 000 tonnes of SO<sub>2</sub> and 230 tonnes of RSP each year.

The Government will continue to closely monitor the global development of technologies and measures to reduce marine emissions and their feasibility of implementation in Hong Kong.

(8) to (10) As for ferry services, operators are required to provide proper maintenance and repairs for their fleets. Services can only be provided after the vessels concerned have passed MD's inspections, certifying that all necessary safety standards have been complied with. Currently, operations of ferry services (such as types of services, journey time and service levels) vary among one another. The design of the ferries running on the services are also different in terms of carrying capacities, speeds and propulsion systems, etc. From the perspective of monitoring ferry services, the Government has at this stage no plan to set a maximum serviceable year for ferries. That said, the Government has all along been encouraging ferry operators to, with regards to their financial positions, consider upgrading their fleets. Eligible ferry operators may also apply to the EPD for subsidy under the Fund to put projects that might enhance the green performance of their fleets on trial.

When formulating the requirements of tender for ferry services, the TD will, in consultation with the relevant departments such as the MD, the Civil Engineering and Development Department and the EPD, set out the vessel requirements having regard to the operational circumstances of each ferry route including passenger demand, service level, actual pier conditions, etc. The vessel requirements will be one of the assessment items in the tender exercise. In future tender exercises for ferry services, the TD will incorporate green elements, encouraging operators, subject to financial viability of their ferry services, to use green vessels or equipment which have been tested and proven to be suitable for local application.

The Government will explore the launch of a pilot scheme to adopt green technologies in local ferries such as electric propulsion system and hybrid propulsion system, etc., for exploring the full implementation of such technologies in the future to reduce the emissions of air pollutants.

Regarding ferry piers leased to ferry operators, major infrastructures therein including power supply facilities are all provided and maintained by the Government. Yet due to constraints in pier space and structure, not every pier can be retrofitted to increase the power supply. If any ferry operator plans to switch to electric ferries, the Government may consider offering assistance on a case-by-case basis.

note: A trial for testing out a diesel-electric propulsion system for ferry was also approved under the Fund in October 2014; the amount approved for the trial was \$3 million. The trial was completed on December 31, 2017.