

**For discussion on
17 July 2017**

**LEGISLATIVE COUNCIL
PANEL ON ENVIRONMENTAL AFFAIRS**

**Proposal to Mandate Vessels to
Use Compliant Fuel within Hong Kong Waters**

PURPOSE

This paper seeks Members' views on a proposal to mandate vessels to use compliant fuel¹ (including fuel with sulphur content not exceeding 0.5% by weight) within Hong Kong waters, starting from 1 January 2019 for improving air quality.

BACKGROUND

2. Marine vessels are one of the major local air pollution emission sources, accounting for 59%, 37% and 34% of the emissions of sulphur dioxide (SO₂), nitrogen oxides (NO_x) and respirable suspended particulates (RSP) respectively in 2015. To reduce air pollution from the marine sector, we have already introduced the following measures :

(a) Air Pollution Control (Marine Light Diesel) Regulation (Cap 311Y)

Since 1 April 2014, a statutory cap of 0.05% on the sulphur content of locally supplied marine light diesel (MLD) is imposed, which was a 90% reduction as compared with the previous limit at 0.5%. The cap controls the use of fuel through the supply side;

(b) Air Pollution Control (Ocean Going Vessels) (Fuel at Berth) Regulation (Cap 311AA)

¹ In the context of this proposal, "compliant fuel" means—

- (a) low sulphur marine fuel with sulphur content not exceeding 0.5% by weight;
- (b) liquefied natural gas (LNG); or
- (c) any other fuel approved by the Director of Environmental Protection on the ground that its use can achieve the reduction of SO₂ emission at least as effectively as the use of low sulphur fuel as set out in (a) above.

Since 1 July 2015, ocean-going vessels (OGVs) are required to switch to use compliant fuel while at berth in Hong Kong. This measure can help reduce the emissions of SO₂ and RSP from OGVs at berth by about 60%, compared with the use of heavy fuel oil with a sulphur content as high as 3.5% which they carry before entering Hong Kong waters. The Regulation does not apply to local vessels² (LVs), military vessels or river trade vessels (RTVs) (i.e. vessels plying exclusively within the river trade limits).

(c) Port Facilities and Light Dues Incentive Scheme

An incentive scheme has been launched since September 2012 to waive 50% of the light facilities and port dues for OGVs that switch to fuel with sulphur content not exceeding 0.5% while at berth. To maintain Hong Kong's port competitiveness subsequent to the implementation of the Fuel at Berth Regulation, this incentive scheme has been extended for 30 months up to 31 March 2018.

3. Hong Kong has been cooperating with the Mainland in tackling regional pollution on various fronts. To attain greater environmental benefits on the front of marine emission control, the former Chief Executive announced in his 2013 Policy Address that Hong Kong would explore with Guangdong the feasibility of requiring OGVs to switch to low sulphur fuel in Pearl River Delta (PRD) ports. We have been working closely with the Mainland to step up marine emission control in the PRD region, including the possible establishment of a regional emission control area.

4. In December 2015, the Ministry of Transport (MoT) issued an Action Plan³ for establishing three domestic emission control areas (DECAs) in Mainland waters, one of which is in the PRD region. Figure 1 shows the

² Local vessels mean vessels certificated and licensed in Hong Kong under the Merchant Shipping (Local Vessels) (Certification and Licensing) Regulation (Cap 548D), including ferries, tug boats, barges, fishing vessels, pleasure vessels, etc.

³ Details of the Action Plan can be found at the following website (Chinese version only): http://www.moc.gov.cn/2016wangshangzhibo/2016zhuant2/xiangguanlianjie/201602/t20160201_1984227.html

geographical boundary of the PRD DECA, which does not cover the waters of Hong Kong and Macao. Under the Plan, most vessels in the DECAs are required to use fuel with sulphur content not exceeding 0.5% by weight (or alternative measures including shore power, clean energy or treatment of exhaust gas that can achieve the same control on emissions) by January 2019. In addition, before 31 December 2019, MoT will conduct an assessment on the implementation of DECAs to determine whether (i) to further limit the fuel sulphur requirement at 0.1%; (ii) to extend the geographical scope of DECAs; and (iii) to introduce other control measures.

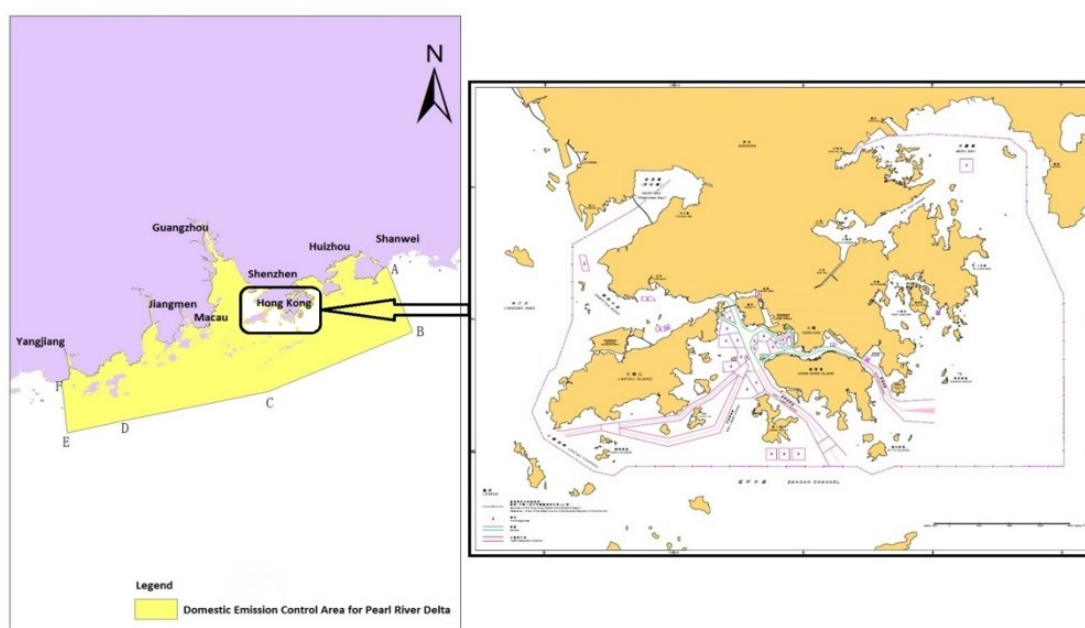


Figure 1 – Boundary of the PRD DECA

5. In December 2016 the Environment Bureau and the Maritime Safety Administration of the MoT signed a Cooperation Agreement on Prevention and Control of Air Pollution from Vessels. A working group comprising representatives from the Guangdong maritime authorities, Environmental Protection Department and Marine Department was also formed to collaborate on the implementation of the PRD DECA. The Mainland's establishment of PRD DECA provides a good opportunity for Hong Kong to step up control over marine emissions in our own waters.

THE PROPOSAL

6. We propose to introduce a new regulation requiring vessels to use

compliant fuel within Hong Kong waters (i.e. not just at berth), starting from 1 January 2019. The compliant fuel requirement applies to main engines, auxiliary engines, boilers and generators on board the vessels where applicable. Relevant prevailing control requirements under the Fuel at Berth Regulation and practices adopted in Emission Control Areas⁴ established under the International Maritime Organization (IMO) form the basis of the proposal. The gist is set out in the paragraphs below.

Controlled Vessels

7. The proposed control will cover all vessels with certain exemptions (see paragraph 8 below). The type of vessels mainly subject to control is OGVs that are using non-compliant fuel, as they will have to switch to using compliant fuel before entering Hong Kong waters⁵. For LVs and RTVs which are to be covered by the proposed regulation, they are designed for running on MLD. As LVs are using locally supplied MLD, and the majority of the RTVs are refilling MLD in Hong Kong because of the better fuel quality and lower price than that in the Mainland, we do not envisage that the proposed regulation will impose additional burden on the normal operations of LVs and RTVs.

8. The following exemptions under the Fuel at Berth Regulation are also applicable in the proposed regulation –

- (a) the vessel is a military vessel⁶;
- (b) the vessel uses emission control technology that can achieve the reduction of emission of sulphur dioxide at least as effective as the use of fuel with sulphur content not exceeding 0.5% by weight; or
- (c) compliance with the requirement will pose a risk to the safety of

⁴ There are four Emission Control Areas (ECAs) including the Baltic Sea area, the North Sea area, the North American area and the United States Caribbean sea area.

⁵ In reality, since OGVs will enter Mainland waters of the proposed PRD DECA before Hong Kong waters, OGVs should have switched to complaint fuel before entering Hong Kong waters.

⁶ “Military vessel” means any warship or any other vessel on military service. The proposed regulation shall not apply to any warship or any other vessel on military service, in line with international practices including the IMO, European Union and United States.

the vessel.

The ship owners, masters or agents shall seek prior approval from the Government before entering Hong Kong waters should they fall under the situations as set out in paragraph 8(b) and (c) above.

Documentation Requirements

9. For OGVs which need to switch fuel for compliance with the proposed regulation, the following should be recorded in a logbook as soon as practicable and the log book shall be kept on board for a period of three years

- (a) the date and time of arrival into Hong Kong waters;
- (b) the date and time of departure from Hong Kong waters;
- (c) the date and time, the position of the vessel, the volume and sulphur content of the compliant fuel when the switch to compliant fuel is completed; and
- (d) the date and time, the position of the vessel, the volume and sulphur content of the compliant fuel when the switch to non-compliant fuel commences;

10. Under the proposed regulation, ship owners or masters of OGVs shall also keep the originals of the following documents on board for inspection by our enforcement authorities –

- (a) a written procedure for fuel switch operation; and
- (b) bunker delivery notes for a period of three years.

Enforcement

11. Enforcement officers will be empowered, under the provisions of the Air Pollution Control Ordinance (Cap. 311) to board a vessel to inspect the relevant documents and collect fuel samples to analyze their sulphur

content, as they deem necessary.

12. We propose that the maximum penalty for a contravention is a fine of HK\$200,000 and 6-month imprisonment. This penalty level is identical to the level for similar offences under the Fuel at Berth Regulation.

13. The proposed regulation will require vessels to use compliant fuel while they are sailing and berthing within Hong Kong waters. When the proposed regulation takes effect, it will cover the scope of control under the current Fuel at Berth Regulation. We therefore propose to repeal the Fuel at Berth Regulation upon the implementation of the proposed regulation.

ENVIRONMENTAL IMPLICATION

14. Under Annex VI to the International Convention for the Prevention of Pollution from Ships (MARPOL Annex VI) of the IMO, the current sulphur content of any fuel oil used on board ships shall not exceed 3.5% m/m. The IMO has also announced in October 2016 to implement a global sulphur cap of marine fuel oil at 0.5% starting from 1 January 2020. Hence, the use of compliant fuel can reduce substantially SO₂ emissions from marine vessels. For instance, since the implementation of the Fuel at Berth Regulation in July 2015, the average concentration of SO₂ recorded at EPD's Kwai Chung Air Quality Monitoring Station from July 2015 to June 2016 was 50% lower than that recorded in the preceding 12 months when it was downwind of the Kwai Chung container terminals.

15. It is anticipated that the implementation of the proposed regulation could further reduce about 6,340 tonnes of SO₂ and 710 tonnes of RSP from marine vessels in 2020, compared with 2015 emission levels. It is also one of the key measures to meet the emission reduction target of SO₂ and RSP in 2020 as agreed with the Guangdong Government with a view to further improving air quality in the PRD region.

COST IMPLICATION

16. Low sulphur marine fuel is about US\$200/tonne⁷ more expensive than residual oil (with a sulphur content as high as 3.5%) which are commonly used in OGVs. Yet, since the implementation of the Fuel at Berth Regulation in July 2015, most of the OGVs entering Hong Kong waters should have carried sufficient amount of marine fuel with sulphur content not exceeding 0.5% to comply with the mandatory fuel switch while berthing in Hong Kong. Considering the small stretch of Hong Kong waters, we do not anticipate any considerable cost implication to the shipping trades due to the advancement of fuel switch in the PRD DECA before entering Hong Kong waters.

17. In addition, we have approached operators of the RTV and LVs on their bunkering practices. Most of these vessels⁸ are already running on locally supplied MLD with a statutory sulphur limit of 0.05% since April 2014. Hence, the proposed regulation should not lead to any cost implication to RTVs and LVs operators under normal operation.

CONSULTATION

18. We sent over 700 invitation letters to relevant marine stakeholders including shipping agents, trade associations, fishing associations, ferry operators, yacht clubs, classification societies, terminal operators, oil suppliers, green groups, chambers of commercial/professional institutions and consulates and held three consultation sessions during March to June 2017 to explain the proposal and invite their views and comments. Over 140 stakeholders attended the consultation sessions and a number of written submissions were received. All submissions were supportive of the proposal and their views have been taken into account to formulate this proposal.

19. We consulted the Advisory Council on the Environment on the proposal on 3 July 2017. The Council supported the proposal.

⁷ The cost differential is based on the average fuel price of low sulphur marine fuel and residual oil of 20 global ports as in June 2017, including Singapore, Rotterdam, Houston and Fujairah.

⁸ Under the Dutiable Commodities (Marking and Colouring of Hydrocarbon Oil) Regulations, no person can use marked oil (i.e. MLD) as a fuel in any pleasure vessel. Hence, pleasure vessels can only use Euro V diesel with sulphur content not exceeding 0.001%.

LEGISLATIVE TIMETABLE

20. We aim at tabling the new regulation to the Legislative Council for scrutiny in mid-2018, with a view to implementing the control on 1 January 2019.

ADVICE SOUGHT

21. Members are invited to comment on the proposal as set out in paragraphs 6 to 13 of this paper.

Environmental Protection Department
July 2017