



33/F, Revenue Tower, 5 Gloucester Road, Wan Chai, Hong Kong
香港灣仔告士打道5號稅務大樓33樓

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**Mandatory Fuel Switch at Berth
for Ocean Going Vessels in Hong Kong Waters**

PURPOSE

This paper seeks Members' views on a proposal to mandate, with effect from 1 January 2015, all ocean-going vessels (OGVs) to use cleaner fuel while at berth in Hong Kong waters so as to improve air quality.

BACKGROUND

2. Marine vessels have become a major local air pollution source, being the largest emission source of respirable suspended particulates (RSP), nitrogen oxides (NO_x) and sulphur dioxide (SO₂) in 2011. In 2011, Hong Kong recorded more than 32,000 OGV-calls, which accounted for 78% of SO₂, 69% of RSP and 42% of NO_x emissions from the marine sector.

3. OGVs run on residual oil with an average sulphur content of 2.6%. Their SO₂ emissions while at berth account for about 40% of their total emissions in Hong Kong. Hence, requiring OGVs to switch to the use of cleaner fuel while at berth can help improve air quality, particularly in the port areas.

4. Annex VI to the International Convention for the Prevention of Pollution from Ships (MARPOL Annex VI) of the International Maritime Organisation (IMO) caps the global sulphur content of marine fuel at 3.5% starting from January 2012. MARPOL Annex VI also provides for a mechanism for IMO Members to designate their waters as

an Emission Control Area (ECA), within which all vessels must use fuel containing not more than 1% sulphur by now and 0.1% sulphur from January 2015 onwards. Four ECAs have been established in the Baltic Sea, the North Sea, North America, and the Caribbean Sea respectively.

5. To improve air quality in the port areas, the European Union (EU) and some ports in North America have required or incentivised OGVs to switch to the use of cleaner fuel when berthing. Some examples are set out at **Annex**.

6. In 2011, 17 major ship liners in Hong Kong launched the voluntary Fair Winds Charter, committing themselves on a voluntary basis to switching to fuel with not more than 0.5% sulphur content as far as possible when berthing in Hong Kong waters. Earlier this year, the trade renewed the Charter till end-2013. It has also urged the Government to mandate this green practice in Hong Kong and jointly introduce it with the Mainland authorities in the Pearl River Delta (PRD) waters as soon as possible.

7. To encourage OGVs to switch to the use of cleaner fuel, we launched in September 2012 a 3-year incentive scheme to reduce by half the port facilities and light dues charged on OGVs using fuel with sulphur content not more than 0.5% when at berth in Hong Kong. To attain greater environmental benefits, the Chief Executive announced in the 2013 Policy Address that Hong Kong would bring in new legislation to enforce the fuel switch requirement for OGVs while at berth.

THE PROPOSAL

8. With reference to the experience of our incentive scheme and the feedback from the shipping trade, we propose to require all OGVs^[1] to use ***low sulphur fuel*** (which will be defined in the new legislation as fuel with sulphur content not exceeding 0.5% by weight) when at berth in Hong Kong waters.

9. All OGVs must initiate fuel switch upon arrival at berth and complete the switch to low sulphur fuel ***within one hour***. The OGV shall then use low sulphur fuel throughout the berthing period ***until one hour*** before departure unless –

¹ In the context of this proposal, "OGV" refers to any vessel that is
(a) not a local vessel as defined in the Merchant Shipping (Local Vessels) Ordinance (Cap. 548); and
(b) not a vessel plying exclusively within the river trade limits.

- (a) using low sulphur fuel will pose safety risk to the OGV;
- (b) all practicable measures according to the established fuel switch procedures have been followed to ensure the use of low sulphur fuel as soon as possible after berthing and as late as possible before departure; or
- (c) there is a justified and unexpected event beyond the shipmaster's control causing delay to the departure of the OGV. In that case, the shipmaster must ensure the event be recorded in the logbook.

Exemptions (a) to (c) above are provided in response to the concerns of the shipping industry raised in consultation.

10. Making reference to the requirement of the EU^[2], shipmasters shall ensure the exact time for fuel switch operation to be recorded in ships' logbooks. Shipmasters shall also keep the originals of the following documents for substantiating the use of low sulphur fuel while at berth –

- (a) Bunker Delivery Note for the past 3 years;
- (b) logbooks showing the date and time of the fuel-changeover operation for the past 3 years; and
- (c) up-to-date version of the operation manual of the fuel changeover procedures.

11. In line with international practices, we will provide exemptions from the fuel switch requirement in the following situations -

- (a) OGVs due to be at berth for less than two hours;
- (b) OGVs adopting alternative fuel (such as liquefied natural gas) or compliance method with emission reduction performance comparable to that of using low sulphur fuel^[3];
- (c) OGVs calling Hong Kong under emergency conditions^[4]; or

² Article 4b of Directives 2012/33/EU

³ Shipmaster / agents should provide documentary evidence certified by a competent person or Classification society to prove for the effectiveness of the alternative compliance method.

⁴ Emergency conditions include incidents in relation to safety of life, pollution and ship damage.

- (d) warships or vessels on military services.

For (b) and (c) above, the shipmaster or the agent shall seek approval from the Government before entering Hong Kong waters.

12. Staff of the Environmental Protection Department will, when necessary, board the vessels to inspect the relevant documents and conduct fuel sampling while the OGV is at berth under the existing provisions of the Air Pollution Control Ordinance (APCO) (Cap. 311).

13. The proposed maximum penalty for contravention is a fine of HK\$200,000 and 6-month imprisonment. This proposed penalty is in alignment with similar offences under the APCO.

ENVIRONMENTAL IMPLICATIONS

14. If all OGVs switch to low sulphur fuel while at berth in Hong Kong waters, the territory emissions of SO₂ and NO_x will be reduced by 14% and 0.2% respectively based on the emission levels in 2011. There will also be a reduction in RSP emission by up to 6%. Moreover, since our terminals are close to residential and commercial areas, the initiative can help improve air quality and reduce the nuisance caused to the population around the port areas.

COST IMPLICATIONS

15. Low sulphur fuel is about 40% more costly than residual oil and the cost differential is about 40%, i.e. US\$300/tonne. A 20,000-tonne OGV switching to low sulphur fuel will, on average, incur an additional fuel cost of about HK\$ 14,000 when berthing in Hong Kong. According to the advice from shipowners and ship operators, the port facilities and light dues incentive^[5] could offset about 35% to 50% of the additional fuel cost of an OGV. Some cruise operators have expressed that for cruise ships, the additional fuel costs could be higher because they consume more fuel than container ships and in general berth for a longer period.

⁵ The Incentive Scheme will expire in September 2015 while we aim at introducing the new legislation in January 2015. The Incentive Scheme and the new legislation will overlap by nine months.

CONSULTATION

16. In the first half of 2013, we sought views from the relevant stakeholders, including shipping agents, ship liners, cruise liners, shipowners, ship classification societies, terminal operators, oil suppliers, green groups, advisory bodies and statutory bodies affiliated to the maritime trade on the proposed fuel switch legislation. The stakeholders in general are supportive of the proposal and we have taken their views into account as far as practicable.

17. Some members of the shipping trade have proposed to provide special grace periods for individual coastal OGVs or OGVs running intra-Pacific routes if they have technical constraints to switch fuel and may need some time to conduct modification. Some have also asked for exempting ships without compliant fuel onboard to cater for "special circumstances", such as maiden voyage. Some are also concerned that the additional cost implications arising from the mandatory fuel switch may compromise the competitiveness of Hong Kong port vis-à-vis neighbouring ports in PRD. Having carefully considered the above, we consider our proposals set out in paragraphs 8-13 above have struck the right balance in view of the following –

- (a) We understand that the majority of the ship liners are able to comply with the fuel switch requirement before the target implementation date. We have specifically sought the views of operators with coastal OGVs or OGVs running intra-Pacific routes on technical constraints to comply with the fuel switch requirement but have not received major feedback. Moreover, there are still some 18 months in the run-up to January 2015. This transitional period is for OGVs to gear themselves up. If necessary, a shipowner or ship operator can schedule its regular dry-dock overhaul for an OGV within the 18 months and take the opportunity to conduct modification. Besides, we have consulted the trade and they agree that this 18-month period suffices for necessary modification, if needed. In fact, the EU only allows 8 months' lead-time upon launching its fuel switch at berth scheme in January 2010. Therefore, we recommend a common commencement date for the fuel switch so as to provide a level-playing field for the trade.
- (b) We do not see it justified to exempt ships without compliant fuel onboard from the requirement. Since OGVs calling Hong Kong are on scheduled itinerary,

they have adequate time and opportunities to acquire low-sulphur fuel (not over 0.5% sulphur content), which is available in nearly all of the major ports. Furthermore, exemption in respect of OGVs calling Hong Kong under emergency conditions will be provided as set out in paragraph 11 above.

- (c) We note the trade's concern about the additional fuel cost implication for the competitiveness of Hong Kong port vis-à-vis neighbouring ports in PRD. We are actively exploring with relevant authorities in Guangdong to jointly implement fuel switch at berth in PRD ports.

LEGISLATIVE TIMETABLE

18. Subject to the support from this Council and the Panel on Environmental Affairs of the Legislative Council, we aim at tabling the new regulation to the Legislative Council for scrutiny in late 2013/early 2014, with a view to implementing it in January 2015. The proposed implementation date would allow adequate lead time for shipowners and operators to make the necessary preparations.

WAY FORWARD

- 19. Members' views are sought on the proposal as set out in paragraphs 8 to 13.

Environmental Protection Department
July 2013

**Arrangement for the European Union and ports in North America for
Requiring or Incentivising OGVs to Use Cleaner Fuel when Berthing**

Areas / Ports	Maximum fuel sulphur content
(a) Ships berthing in European Union ports	0.1% from January 2010
(b) In North America, some ports (e.g. Vancouver, Seattle, Tacoma, New York and New Jersey) have introduced voluntary and incentivised fuel switch at berth programmes.	0.1% to 0.5% (varies with ports and incentive schemes). In the Emission Control Area in North America, the fuel sulphur content will be capped at 0.1% as from 1 January 2015.
(c) Ships operating in waters within 24 nautical miles off the coastline of California	<ul style="list-style-type: none"> ● 0.5% - 1.5% (depending on fuel types) from July 2009 ● 0.5% - 1% (depending on fuel types) from August 2012 ● 0.1% from January 2014