

空氣質素指標檢討工作小組
The Air Quality Objectives Review Working Group
海上運輸專家小組
Marine Transportation Sub-group
第三次會議
Third Meeting

日期： 2016年9月22日（星期四）

Date: 22 September 2016 (Thursday)

時間： 下午2時30分

Time: 2:30 pm

地點： 灣仔告士打道5號稅務大樓33樓會議室

Venus: Conference room, 33/F., Revenue Tower, 5 Gloucester Road, Wanchai

會議議程
Agenda

1.	通過第二次會議摘要 Confirmation of digest of the second meeting
2.	討論執行“使用清潔燃料”的建議措施及其主要考慮因素 (經修訂後的建議措施及其主要考慮因素載於附件) Discussion on key considerations for the implementation of proposed measures under “Use of clean fuel” (see Annex for the revised list of proposed measures and their key considerations)
3.	其他事項 Any other business
4.	下次會議日期 Date of next meeting

建議的新空氣質素改善措施	主要考慮因素
A. 使用清潔燃料	
1. 研究於船隻上使用液化天然氣。	- 國際上使用清潔燃料的趨勢及監管條例的發展(如電動船的電池發展)；
2. 研究於船隻上使用生物燃料(如 B5 生化柴油)、燃料電池、液化石油氣、甲醇、核能和再生能源，如風力和太陽能等。	- 船隻應用相關技術的成熟程度； - 市場上相關船隻的供應；
3. 研究使用混能、柴油電力和電動船。	- 供應燃料的設施； - 燃料的供應； - 對成本的影響； - 安全考慮。
4. 遠洋船停泊時須使用含硫量上限不超過 0.1% 的船用柴油。	- 使用低硫燃料的國際趨勢及區域情況； - 燃料的供應； - 對成本的影響； - 業界反應； - 對港口競爭力的影響。
5. 本地船隻泊岸時使用岸電 (例如在渡輪碼頭提供岸電予渡輪使用)	- 岸電系統的基礎設施及相關配套； - 可使用岸電的船隻的供應和普及程度；
6. 內河船在碼頭停泊時使用岸電	- 運作及保養的需要及成本；
7. 遠洋船泊岸時使用岸電	- 業界反應。
B. 技術性措施	
1. 為遊樂船舷外引擎訂立排放標準。	- 技術成熟程度； - 對成本的影響； - 於其他本地船隻的應用； - 業界反應。
2. 於本地船隻引擎上安裝排放消滅器件(例如粒子過濾器)以減低粒子排放。	- 安裝設施的技術可行性； - 國際上減少船隻粒子排放技術的趨勢及相關監管條例的發展； - 對成本的影響； - 保養方面的考慮； - 業界反應。
3. 管制本地船隻引擎的氮氧化物排放。	- 技術成熟程度； - 對成本的影響； - 業界反應； - 國際上減少船隻氮氧化物排放的趨勢及相關監管條例的發展；

建議的新空氣質素改善措施	主要考慮因素
C. 節省燃料、能源效益及港口管理	
1. 研究向遠洋船公司提供經濟誘因或抑制措施，鼓勵它們使用較環保的遠洋船進入香港。	<ul style="list-style-type: none"> - 對港口競爭力的影響； - 船運業界的營運成本； - 訂立經濟誘因或抑制措施的基準。
2. 優化港口運作效率以縮短遠洋船、內河船及中流作業營辦商於貨櫃碼頭、內河碼頭及公眾貨物裝卸區的靠泊及作業時間。	<ul style="list-style-type: none"> - 港口發展的策略性規劃； - 海上交通方面的考慮； - 可行性； - 對貨櫃碼頭、內河碼頭及公眾貨物裝卸區運作的影響。
3. 遠洋船於香港水域內減速航行。	<ul style="list-style-type: none"> - 對海上交通的影響(將會諮詢香港領港會的意見)； - 船運業界的營運成本； - 業界反應。
4. 鼓勵學術界研究本地船隻在運作及保養方面的節省燃料和能源效益措施(例如使用輕質物料如碳纖維以減輕船隻重量、調較螺旋槳螺距角度、定期為螺旋槳及船殼進行保養、於本地船隻上推動泵和抽風系統的摩打加裝變頻推動器、及開發裝置以監察本地船隻引擎的操作表現等)。	<ul style="list-style-type: none"> - 提供資助以支持研究項目； - 提供足夠資源用以培訓航海方面的專門人才及工程人員； - 船隻應用相關技術的成熟程度、成本影響、安全考慮、配套設施及技術支援。 - 促使業界使用相關措施及檢討措施成效的機制；
5. 在本地船隻上使用具能源效益的電器，如使用發光二極管燈。	<ul style="list-style-type: none"> - 對成本的影響。
6. 鼓勵業界制訂節省燃料和能源措施的最佳作業指引，與業界設立獎項以推動他們執行相關指引。	<ul style="list-style-type: none"> - 對成本的影響； - 對資源的影響； - 實施相關措施的可行性。
D. 其他建議	
1. 清理海面垃圾，使小型本地船隻運作更暢順。	<ul style="list-style-type: none"> - 對資源的影響； - 可行性。
2. 政府加快審批新船的過程。	<ul style="list-style-type: none"> - 對資源的影響； - 可行性。

Annex

Proposed new air quality improvement measures	Key considerations
A. Use of clean fuel	
1. Explore the use of Liquefied Natural Gas (LNG) for marine vessels	<ul style="list-style-type: none"> - International trend and regulatory development in the use of clean fuel (e.g. battery development for electric vessels); - Technology maturity for use in onboard vessels; - Availability of vessels in the market; - Bunkering facilities; - Fuel supply; - Cost implications; - Safety considerations.
2. Explore the use of biofuel (e.g. B5), fuel cell, Liquefied Petroleum Gas (LPG), methanol, nuclear and renewable energy, e.g. wind and solar energy, etc. for marine vessels	
3. Explore the use of hybrid, diesel electric and electric vessels	
4. Ocean-going vessels (OGVs) at berth to use marine diesel with lower fuel sulphur content, e.g. not exceeding 0.1%.	<ul style="list-style-type: none"> - International trend and regional situation in the use of lower sulphur fuel; - Fuel supply; - Cost implications; - Trade reaction; - Implications on port competitiveness.
5. Local vessels to use on-shore power supply (OPS) while at berth (e.g. provision of OPS to ferries at ferry piers).	<ul style="list-style-type: none"> - Infrastructure and ancillary facilities for OPS system; - Availability and popularity of OPS-ready vessels; - Operation and maintenance needs and cost; - Trade reaction.
6. River trade vessels to use OPS while at berth at terminals.	
7. OGVs to use OPS while at berth.	
B. Technical measures	
1. Impose emission standards on outboard engines of pleasure crafts.	<ul style="list-style-type: none"> - Technology maturity; - Cost implications; - Applications to other types of local vessels; - Trade reaction.
2. Install emission reduction device (e.g. particulate filters) to reduce particulate matters (PM) emitted from local vessels.	<ul style="list-style-type: none"> - Technical feasibility for installation; - International trend and regulatory development in reducing PM emissions from marine vessels;

Proposed new air quality improvement measures	Key considerations
	<ul style="list-style-type: none"> - Cost implications; - Maintenance considerations; - Trade reaction.
<p>3. Impose control on nitrogen oxides (NO_x) emissions from engines of local vessels.</p>	<ul style="list-style-type: none"> - Technology maturity; - Cost implications; - Trade reaction; - International trend and regulatory development in reducing NO_x emissions from marine vessels.
<i>C. Fuel economy, energy efficiency, and port management</i>	
<p>1. Explore financial incentive and disincentive schemes to encourage liners to use less polluting OGVs calling Hong Kong ports.</p>	<ul style="list-style-type: none"> - Implications on port competitiveness; - Operating costs for the shipping trade; - Benchmark for giving incentives / disincentives.
<p>2. Optimize port efficiency to shorten waiting and turnaround time of OGVs, river trade vessels and mid-stream operators at container terminals, river trade terminals and public cargo working areas (PCWA).</p>	<ul style="list-style-type: none"> - Strategic planning on port development; - Marine traffic considerations; - Feasibility; - Impact on operation of container terminals, river trade terminals and public cargo working areas.
<p>3. Slow-steaming of OGVs in Hong Kong waters.</p>	<ul style="list-style-type: none"> - Impact on marine traffic (the Hong Kong Pilots Association will be consulted) ; - Operating costs for the shipping trade; - Trade reaction;
<p>4. Encourage academia to carry out studies on fuel and energy efficient measures in terms of operation and maintenance for local vessels, e.g. use of light-weight materials such as carbon fibre, adjustment of propeller pitch angle, regular servicing of propeller and ship hull, use of variable frequency drives (VFD) on motors for pumps and fan systems on board, develop devices to monitor engine performance of local</p>	<ul style="list-style-type: none"> - Availability of funding support for the studies; - Provision of resources for training of maritime professionals and engineers; - Technology maturity, cost implications, safety considerations, availability of ancillary facilities and technical support of adopting such measures; - Availability of mechanism to facilitate

Proposed new air quality improvement measures	Key considerations
vessels, etc.	adoption of the measures by the trade and review of their outcomes;
5. Use energy efficient electrical devices on board local vessels, e.g. LED lightings.	- Cost implications;
6. Encourage the marine trade to develop best practice guidelines on fuel and energy saving measures, facilitate their adoption through establishment of award system with the marine trade.	<ul style="list-style-type: none"> - Cost implications - Resources implications; - Feasibility of implementing such measures.
<i>D. Other suggestions</i>	
1. Remove floating rubbish for smooth operation of small local vessels.	<ul style="list-style-type: none"> - Resources implications; - Feasibility.
2. Government to expedite the approval process of new local vessels.	<ul style="list-style-type: none"> - Resources implications; - Feasibility.