

The British Chamber of Commerce in  
Hong Kong

Response to the Hong Kong Government  
Proposal to Control Emissions of  
Non-road Mobile Sources

July 2010

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## 1. INTRODUCTION

The Environmental Protection Department (EPD) recently released “A Proposal to Control Emissions of Non-road Mobile Sources” (Proposal Document) for consultation. The document states that the 13,500 units of non-road mobile machinery (NRMM) within Hong Kong generate 7% of Hong Kong’s total nitrogen oxide (NOx) and 10% of respirable suspended particle (RSP) emissions. This percentage appears to be relatively high given the small number of vehicles involved. Furthermore the statistics therefore suggest that the NRMM are the most polluting land based vehicles in Hong Kong.

Recent research indicates that there are public health impacts that are affecting the population residing in Hong Kong and that these are directly related to air pollution<sup>1</sup> with NOx and RSP emissions being the two of the principal contributors<sup>2</sup>. The British Chamber of Commerce thus supports Hong Kong Government’s efforts to control and reduce these sources of emissions and public health impacts.

It is noted that the Hong Kong Government proposals to control emissions from NRMM broadly correspond with the approach taken in other similarly developed countries and comprise the adoption of a controlled emissions standard for newly imported or manufactured vehicles. However, given the particular challenges Hong Kong is facing in terms of its air quality and associated public health impacts, it is considered that more stringent measures need to be considered in the relatively short term to control the emissions from the NRMM.

This response paper reviews the current proposals and makes some further suggestions for Government’s consideration.

## 2. SCOPE OF GOVERNMENT PROPOSALS

### 2.1 Legislation Proposals

The Government has proposed the following legislation-backed control scheme to be introduced within 2011:

#### (i) Importers Proof of Acceptance

Importers and local manufacturers must demonstrate to the satisfaction of EPD that their NRMM will meet an emissions standard that is equivalent to the relevant standards in the European Union, the United States and Japan. The proposed penalty for importing NRMM without a permit or for violating permit conditions is a fine of HK\$200,000 or six months imprisonment. This is supported as a means of control.

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<sup>1</sup> According to the Hedley Environmental Index (<http://147.8.71.207/pollution/>), air pollution has accounted for an estimated 7260 premature deaths and 523592 hospital bed days in Hong Kong between 2004 and mid June 2010.

<sup>2</sup> Oxides of nitrogen and respirable suspended particles (or particulate matter) are identified by the World Health organization as toxic pollutants and their levels are measured in Hong Kong by the Environmental Protection Department.

**(ii) Emission I.D. Labelling**

Each newly registered NRMM must carry a prominent label for identification. A fine of HK\$50,000 or three months imprisonment is proposed to be imposed on the importer for failure to display a permit or keep proper records. This is supported as a means of control.

**2.2 Other Measures**

In addition to the legal requirements above, The Government has proposed some additional measures:

**(i) Inventory Control**

The Government proposes to implement an inventory for NRMM to assist with the future management of emissions from the NRMM fleet. There is currently no inventory of currently operating NRMM and no licensing or registration requirements for these NRMM. The establishment of such an inventory would assist Government to succeed with its mission to reduce this source of emission.

**(ii) Voluntary Emission Control Measures**

A number of voluntary measures “to promote and speed up the application of general and practicable emission control measures” are proposed in the consultation document and are broadly supported. These include:

- Aircraft to use ground power rather than auxiliary power units;
- Conversion of diesel gantry cranes to hybrid or electric power sources;
- Shutting down idling NRMM; and
- Encouraging the use of hybrid, electric and clean fuel NRMM.

**2.3 Exemptions**

NRMM with power outputs of less than 19 kilowatts (mostly gardening equipment with lower emissions than commercial NRMM with much larger engines) or greater than 560 kilowatts (specialized construction equipment that is registered for on-road use and must comply with more stringent standards) is proposed to be exempt. EPD predicts that these measures will reduce NOx emissions from 6,800 to 2,300 tonnes, and RSP from 600 to 100 tonnes. No timeframe was given.

**3. REVIEW OF PROPOSED MEASURES AND RECOMMENDATIONS**

Data published by EPD indicates that NRMM are approximately four times more polluting than diesel commercial vehicles (DCV). DCVs comprise of buses and trucks, which account for 80% of all vehicular emissions, although only 20% of the total number of road vehicles (See Table 1).

**Table 1. Comparative Emissions per Vehicle (kg) for NRMM and DCVs**

Vehicles	No. of vehicles	Emissions			
		NOx emissions		RSP emissions	
		Tonnes	kg/vehicle	Tonnes	kg/vehicle
All road vehicles	643,371 <sup>3</sup>	20,900 <sup>4</sup>	32	1,680 <sup>5</sup>	2.6
Diesel commercial vehicles	130,703 <sup>6</sup>	15,884	121	1,478	11.3
Non-road mobile machinery	13,500 <sup>2</sup>	6,800 <sup>6</sup>	500	600 <sup>6</sup>	44

*Note: Diesel commercial vehicles account for 76% of total NOx emissions from road vehicle emissions and 88% of total RSP emissions from road vehicle emissions<sup>2</sup>*

**Note:** The above “Table 1” has been created by the Civic Exchange, who have permitted the British Chamber of Commerce to use it as part of this submission

Given the significance of their contribution to roadside emissions, the Government’s intention to introduce measures to reduce emissions from NRMM is welcome. The British Chamber also supports the intent to establish an inventory of newly registered NRMM as noted above.

Further suggestions are presented for consideration in response to this consultation process:

**(a) Expedite the Implementation**

Define expeditious timescales for introducing measures to reduce emissions from new and existing vehicles ie currently in-use NRMM.

**(b) Adopt More Stringent Controls**

It is suggested that Hong Kong may wish to show leadership in the Region through the swift adoption of tighter controls on NRMM, in keeping with the best practice of other cities with a comparable level of economic, administrative and social development.

**(c) Extend the scheme to in-use NRMM**

Extend the scheme to in-use NRMM which are likely to be responsible for a larger proportion of Hong Kong’s emissions and consider establishing an NRMM inventory for this existing equipment.

<sup>3</sup> Environmental Protection Department. (10 March 2010). Early Replacement of Old Diesel Commercial Vehicles (LC Paper No: CB(1) 1250/09-10(01)). Retrieved May 6, 2010, from [http://legco.gov.hk/yr09-10/english/panels/ea/ea\\_iaq/papers/ea\\_iaq0310cb1-1250-1-e.pdf](http://legco.gov.hk/yr09-10/english/panels/ea/ea_iaq/papers/ea_iaq0310cb1-1250-1-e.pdf)

<sup>4</sup> Environmental Protection Department (January 2009) Hong Kong Emissions Inventory. Retrieved June 16 210 from [http://www.epd.gov.hk/epd/english/environmentinhk/air/data/emission\\_inve\\_nox\\_C.html](http://www.epd.gov.hk/epd/english/environmentinhk/air/data/emission_inve_nox_C.html)

<sup>5</sup> Environmental Protection Department (January 2009) Hong Kong Emissions Inventory. Retrieved June 16 210 from [http://www.epd.gov.hk/epd/english/environmentinhk/air/data/emission\\_inve\\_rsp\\_C.html](http://www.epd.gov.hk/epd/english/environmentinhk/air/data/emission_inve_rsp_C.html)

<sup>6</sup> Environment Bureau/Environmental Protection Department. Retrieved June 16, 2010 from [http://www.epd.gov.hk/epd/english/news\\_events/events/files/nonroad\\_proposal.pdf](http://www.epd.gov.hk/epd/english/news_events/events/files/nonroad_proposal.pdf)

A tender process could be used to accelerate the development of an inventory of in-use NRMM, with all contractors required to provide documentation on the age and designed emissions level of their equipment. The co-operation of large property developers in collecting the same data through their own tender processes would greatly expedite the development of an inventory of in-use NRMM.

**(d) Promote Mobile Cold Ironing for Plug-in Electric NRMM Retrofitting**

Promote the practicality of mobile cold ironing facilities thereby allowing greater emphasis on portable electric plug-in stations and the consequent retrofitting of NRMM equipment to support this emission free solution. It is of note that at the Kwai Tsing container terminal emission free cranes and other essential operating equipment have been successfully implemented without affecting throughput.

**(e) Increased Penalties**

Increased penalties may be considered as a more draconian deterrent to prevent non-compliant and highly polluting NRMM from being imported and operated in Hong Kong. Percentage of capital costs or some other mechanism which is reflective of the pollution potential could be considered.

**(f) Incentivise NRMM Replacement**

Government may wish to consider incentives to encourage a more rapid transition to cleaner NRMM. One suggestion is to accelerate the retirement of older and more polluting units, by setting a maximum age for NRMM use, initially say on Government projects and then as part of a plan to progressively lower the age according to a fixed timeframe. This maximum age could be specified in tender documents, or as a technical circular. While this may increase the cost of Government projects, this expense could be considered to be borne by the Capital Works Reserve Fund.

**(f) Subsidizing SME Construction Contractors for NRMM Replacement**

For those SME contractors, where the costs of equipment form a significant component in the investment portfolio, consideration may be given to providing subsidies or enhanced incentives to encourage replacement of in-use NRMM.

**(g) Include Responsibilities for Owners and Leasers**

It is suggested that Government may wish to consider requiring the owner or leaser of the NRMM ensures:

- that the label on the NRMM is correctly displayed; and
- that the NRMM operates according to the designated standard

Both approaches will require regular audits and testing. It is noted that a wide variety of NRMM are currently in-use and that there is no standard test for this equipment. It is suggested that appropriate methodology for testing should be devised to permit the auditing role to be conducted as soon as possible.

**(g) Implement an Independent Annual Inspection**

Government may wish to consider introducing annual independent inspection and testing of NRMM in the same way that road vehicles are inspected. As a result NRMM vehicle worthy certificates could be issued and displayed.

**(h) Health Check Study**

Given the high emissions from NRMM, Government may wish to consider commissioning a study to evaluate the impacts on the health of their operators to allow control measures to be defined.

**(i) Timeframe for Scheme Implementation**

The timeframe for implementation of the scheme requires careful consideration, and needs to allow owners of NRMM time to plan the replacement of their equipment without causing disruption to the ongoing business activities.

**4. CONCLUSIONS**

The British Chamber of Commerce re-iterate their support for the Government initiatives to reduce emissions and improve air quality which is a key issue for both residents and the business community.

However, the Chamber considers that the current proposals could be further enhanced, and supports early implementation of the proposed measures.

The Chamber trusts Government finds the foregoing to be of value in the overall consultation process and looks forward to participating in further consultations on this or other related topics in due course.