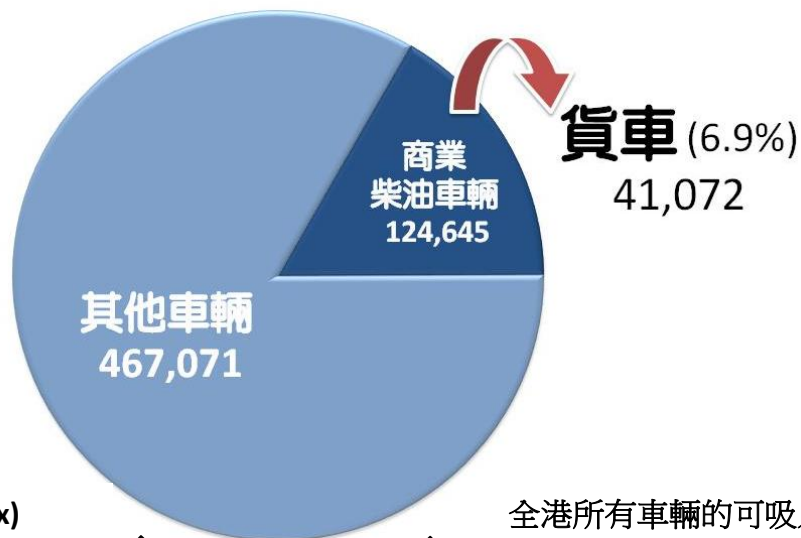


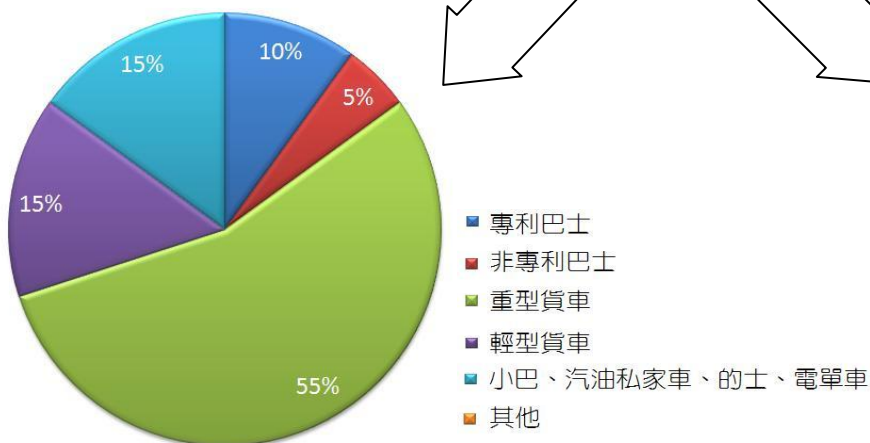
## 香港貨車污染背景資料

- 路邊廢氣貨車排放稱冠，50%懸浮粒子和 55%氮氧化物均來自貨車
  - 舊貨車使用的引擎通常只達歐盟 II 期或以下的標準<sup>1</sup>。一般而言，歐盟前期的引擎排出的可吸入懸浮粒子和氮氧化物比歐盟 V 期分別多出 34 倍及 2 倍。<sup>2</sup>
  - 根據運輸署 2010 年 8 月數字<sup>3</sup>，現時香港路面上約有 591,716 部車輛，當中約 21% 即 124,645 部是商業用柴油車輛。雖然貨車<sup>4</sup>只佔其中的 41,072 部 (約 6.9%)，但其排放的多並不合乎比例。

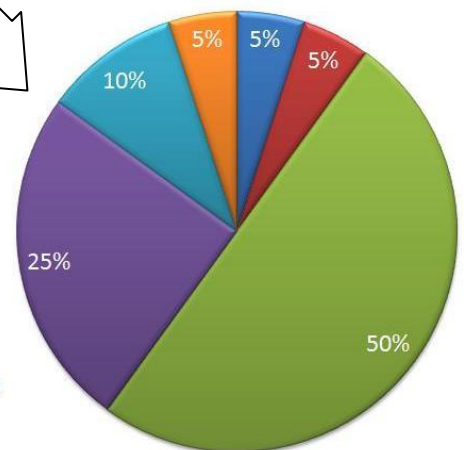
### 全港 591,716 架路邊車輛的分類 及廢氣排放分布



### 全港所有車輛的氮氧化物 (NOx) 排放量分布 (2007 年)



### 全港所有車輛的可吸入懸浮粒子 (PM) 排放量分布 (2007 年)



<sup>1</sup> 歐盟引擎分類是按照引擎的年期劃分，前期是最舊引擎而 V 期則是目前最新的引擎。

<sup>2</sup> 立法會文件 (2010 年 5 月 28 日)

<http://www.legco.gov.hk/yr09-10/chinese/fc/fc/papers/f10-19c.pdf>

<sup>3</sup> 運輸署: 按燃料種類劃分的車輛登記及領牌統計數字 (2010 年 8 月)

[http://www.td.gov.hk/filemanager/en/content\\_4409/table44.pdf](http://www.td.gov.hk/filemanager/en/content_4409/table44.pdf)

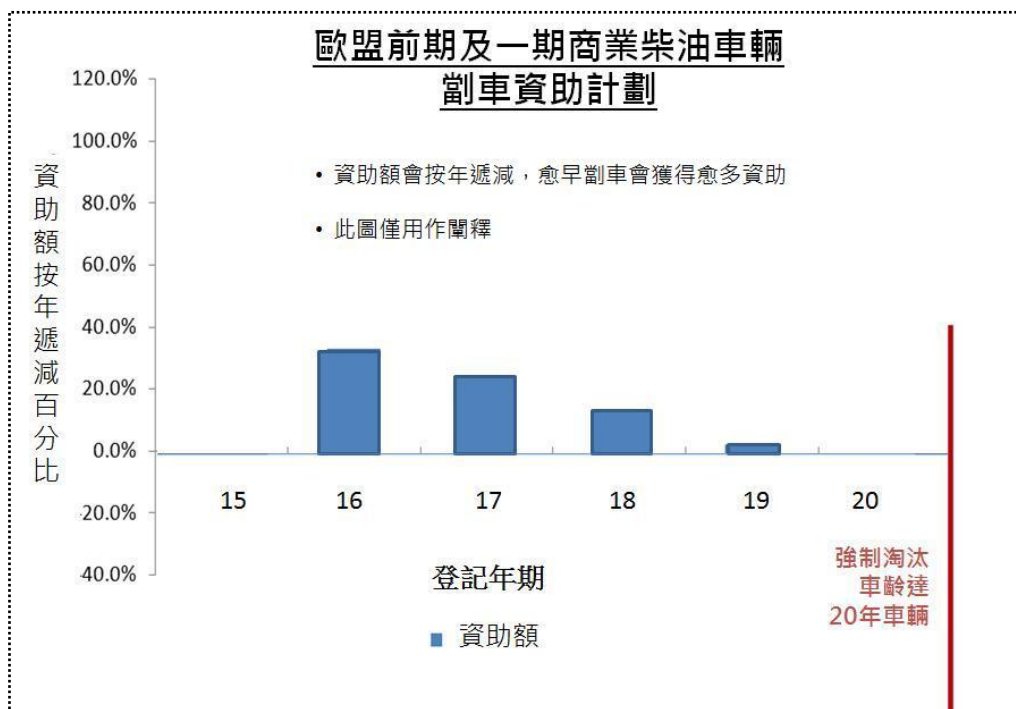
<sup>4</sup> 貨車的定義包括重型貨車(超過 24 公噸)、中型貨車(5.5-24 公噸)和特別用途車輛



- 根據環保署 2007 年資料顯示，貨車所排放的懸浮粒子數量和氮氧化物，分別佔總體汽車排放量的 50% 及 55%。<sup>5</sup>

## 2. 資助金額少換車無望，貨車司機轉行無門

- 環境保護署 2007 年推出更換歐盟前期及一期商業柴油車資助計劃，鼓勵商用車主更換歐盟四期車輛，前期或一期車主可分別獲新車的 12% 和 18% 資助額。18 個月的計劃完結後，合資格的 59,000 架的商業柴油車中只有 16,000 輛參與是次計劃，業界反應甚為冷淡。司機參與度低亦反映資助金額低欠缺吸引力。
- 商業柴油車資助計劃只限車換車，對於本身經營不善的司機而言，12% 或 18% 的資助額只勉強抵銷日元升值所致的上漲車價，他們根本無法負擔購買新車，資助計劃並不構成吸引的經濟誘因<sup>6</sup>。
- 除了增加資助金額，政府應考慮割車計劃、一筆過補償車主棄掉老舊貨車的損失，起碼讓經營不善、百上加斤的一群職業貨車司機早日轉行，亦可解決一部份老舊貨車的廢氣排放問題。
  - 健康空氣行動建議的「割車計劃」：
    - i) 針對現時資助計劃無論何時換車均獲同等資助額的漏洞，建議愈早割車獲得愈多資助；反之，愈遲割車資助則愈少，以鼓勵司機們提早換車
    - ii) 政府應強制淘汰車齡達 20 年的歐盟 II 期或以前的車輛
    - iii) 應禁止車齡超過 15 年的貨車進入低排放區



<sup>5</sup> 資料來源：環保署官員於 2009 年 12 月電郵回覆的數字

<sup>6</sup> 資料來源：東方日報 (28/3/2010)

[http://orientaldaily.on.cc/cnt/news/20100328/00196\\_001.html](http://orientaldaily.on.cc/cnt/news/20100328/00196_001.html)



- 有環保處官員表示憂慮劊車計劃成效不大，擔心缺乏工作技能的貨車司機難於轉行。但其實不少貨車司機希望徹底擺脫而非更換新的貨車。若政府引入劊車計劃，早日淘汰多一輛老舊貨車，早日清除路邊的廢氣源頭。
  - 不同於其他道路污染者，貨車業界組織較為分散。貨車司機多獨立營運而非由企業統籌的車隊。所以我們認為立法會較易通過此等「惠民」的政策。
  - 政府於本年七月推行新的資助計劃更換歐盟 II 期的商業柴油車輛，但此計劃並沒有處理最舊 (即歐盟前期 I 及期) 的 36,800 部車輛<sup>7</sup>。此舉反映在決策上欠缺優先次序，而如何處理舊貨車的重大問題始終並未解決。
3. 外國務實處理貨車污染，香港政府議而不決欠果斷
- 除提高資助額外，香港政府應仿效外國政府的做法，向貨車司機提供低息貸款提供更大的經濟誘因。
    - 美國得州：針對貨車廢氣所做成的空氣污染提供應對措施，為貨車司機提供低息貸款購買新車，或直接為司機購買新貨車<sup>8</sup>。
    - 美國環境保護局 (EPA) 和紐約州及新澤西州海港協會 (PANYNJ) 推出貨車潔淨計劃，資助車主更換 600 部 1993 年製造的老舊貨車，政府會資助新型潔淨貨車車價 25%，而其餘款項政府會提供低息貸款<sup>9</sup>。
  - 特區政府擬於 2015 年，在香港交通繁忙地區設立低排放區，屆時只有低排放巴士可以進入區內。政府應把貨車亦納入管制範圍、減少最污染的柴油車輛進入人煙稠密的區域。
    - 北京規定重型貨車日間不得進入市中心，而最舊最骯髒、貼有黃色標籤的貨車，甚至完全被禁止進入市內<sup>10</sup>。
4. 貨車廢氣禍害多，司機健康首當其衝
- 柴油車輛司機、柴油機械操作工人、及持續吸入柴油廢氣的工人，他們患上肺癌的機會率比一般人高出 50%<sup>11</sup>。

<sup>7</sup> 在 2007 年推出「更換歐盟前期及一期商業柴油車資助計劃」，約有 59,800 部合資格車輛。三年的資助期完結後，歐盟前期及 I 期的車輛減少 23,000 部，當中 16,000 部參與是次計劃獲得資助換車。

<sup>8</sup> 資料來源：環境保護基金會

<http://blogs.edf.org/texascleanairmatters/2010/05/21/solving-truck-pollution-at-ports/>

<sup>9</sup> 紐約州及新澤西州海港更換柴油車改善港口污染情況 (10/3/2010)

<http://www.treehugger.com/files/2010/03/diesel-trucks-pollution-reduction-epa-port-nyc-new-jersey.php>

<sup>10</sup> 紐約時報：北京空氣可更潔淨(16/10/2009)

[http://www.nytimes.com/2009/10/17/world/asia/17beijing.html?\\_r=4&ref=global-home](http://www.nytimes.com/2009/10/17/world/asia/17beijing.html?_r=4&ref=global-home)

<sup>11</sup> 資料來源：美國癌症學會

[http://www.cancer.org/docroot/NWS/content/NWS\\_1\\_1x\\_EPA\\_Reports\\_Diesel\\_Linked\\_To\\_Lung\\_C](http://www.cancer.org/docroot/NWS/content/NWS_1_1x_EPA_Reports_Diesel_Linked_To_Lung_C)



- 空轉引擎的貨車車廂中，懸浮粒子的濃度是美國一般州份或聯邦環保組織可接受程度的 2000 倍<sup>12</sup>。
- 一輛緩慢行駛的重型柴油貨車，每公里所排出的污染物比正常行走的貨車更多，其中有機碳微粒的排放量多 8.1 倍，而元素碳則多 1.9 倍。來往中港的交通頻繁，貨車經常大排長龍，貨車司機長期吸入大量有毒的柴油廢氣。而車廂之中空氣並不流通，亦會令汽車廢氣聚積，增加司機患上心臟病、中風、哮喘等等疾病的機會<sup>13</sup>。

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[ancer.asp](#)

<sup>12</sup> 資料來源: 美國自然資源保護委員會及 Coalition for Clean & Safe Ports

<http://www.nrdc.org/media/2007/071204.asp>

<sup>13</sup> 資料來源: 美國環保局

<http://www.epa.gov/SmartwayLogistics/presentations/nescaum-041404.pdf>

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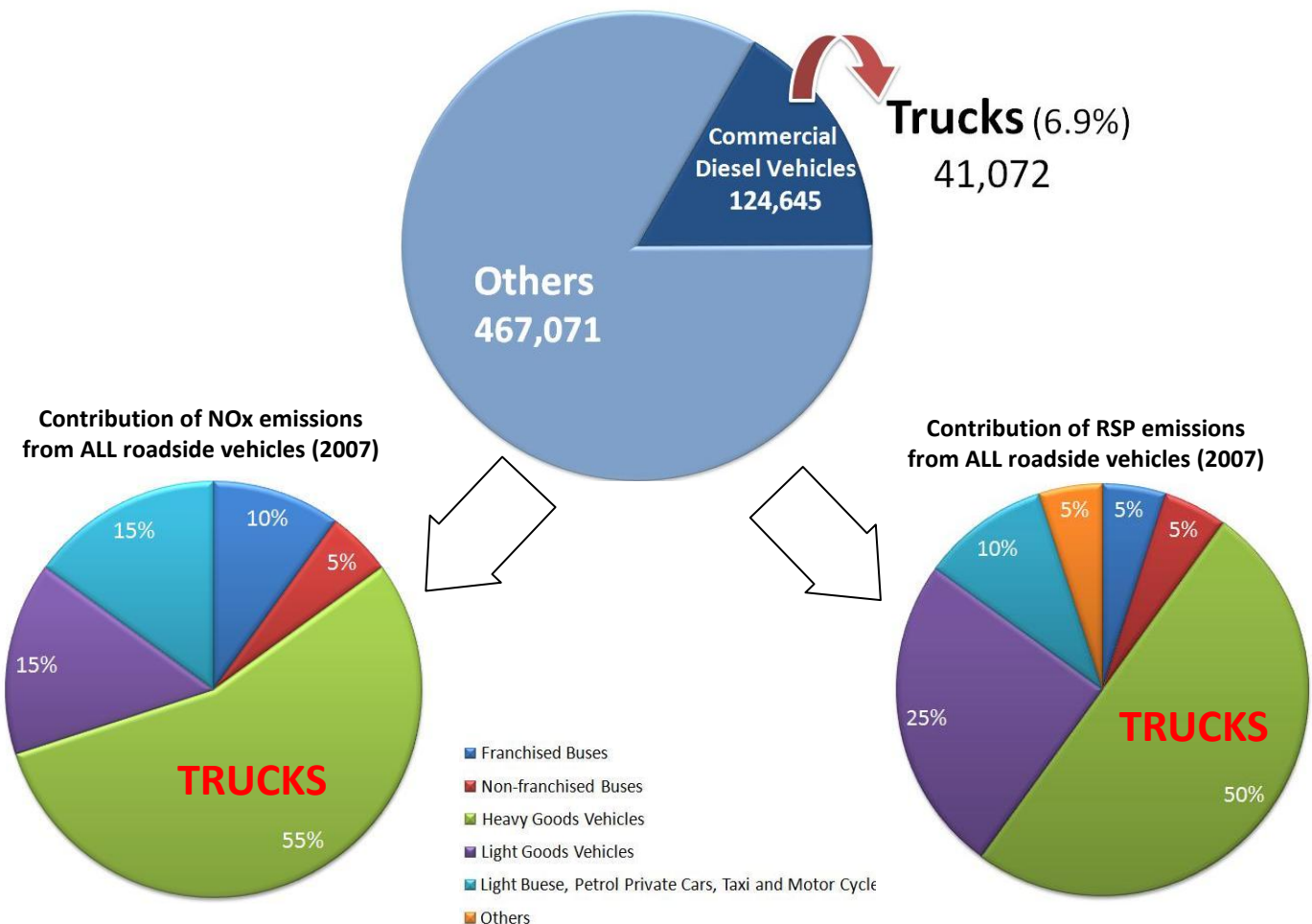
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## Hong Kong Truck Backgrounder

- Emissions from trucks are disproportionately large relative to the actual number of trucks on Hong Kong's roads. 50% of Nitrogen Oxide (NOx) and 55% of Particulate Matter (PM) emissions come from trucks.
  - Old trucks use engines that meet Euro II standard or below<sup>1</sup>. A Euro V engine (the newest standard) is 34 times and 2 times less polluting than a pre-Euro engine in terms of its emissions of PM and NOx respectively<sup>2</sup>.
  - According to statistics from the Transport Department, as of August 2010<sup>3</sup>, there were 591,716 vehicles on the road in Hong Kong, 21% (124,645) of which were commercial diesel vehicles. Although trucks<sup>4</sup> only make up around 6.9% (41,072) of all vehicles, the amount of pollution emitted from them is disproportionately large.

### Breakdown of 591,716 Roadside Vehicles and their contribution to roadside pollution (August 2010)



<sup>1</sup> "Euro" classes describe the age of a diesel engine, according to age, with Euro I being the oldest.

<sup>2</sup> Legco Paper (28 May 2010)

<http://www.legco.gov.hk/yr09-10/english/fc/fc/papers/f10-19e.pdf>

<sup>3</sup> Transport Department: Registration and Licensing of Vehicles by Fuel Type (August 2010)

[http://www.td.gov.hk/filemanager/en/content\\_4409/table44.pdf](http://www.td.gov.hk/filemanager/en/content_4409/table44.pdf)

<sup>4</sup> Definition of trucks : heavy goods vehicles (over 24 tons), medium goods vehicles (5.5 -24tons) and special purpose vehicles



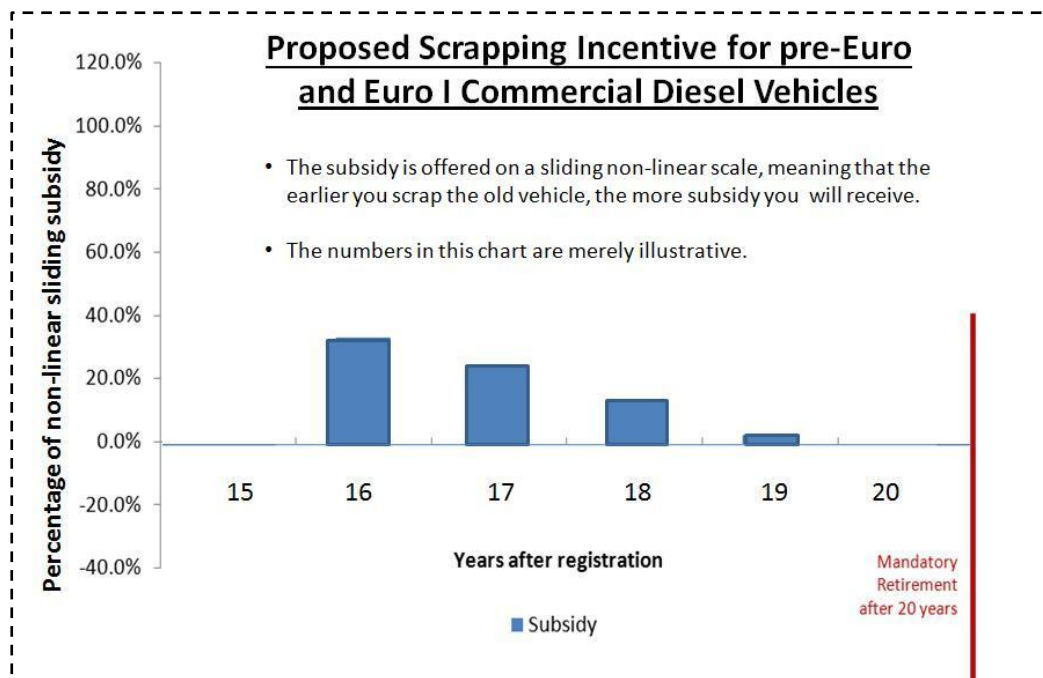
- The 2007 figure from the Environmental Protection Department (EPD) shows that NOx and PM emitted from trucks account for 50% and 55% of total vehicular emissions, respectively.<sup>5</sup>
2. Insufficient amount of subsidy per truck and no scrapping incentives
- The EPD implemented an Early Retirement Scheme for pre-Euro and Euro I commercial diesel vehicles in 2007 to encourage vehicle owners to replace their old vehicles with newer Euro IV standard vehicles. Pre-Euro and Euro I vehicle owners could receive a 12% and 18% subsidy, respectively, of the value of their new vehicles. When the 18-month project was over, only 16,000 commercial diesel vehicles out of the 59,000 eligible ones had participated in the scheme, indicating an indifferent attitude within the commercial diesel vehicle trade. The lack of uptake could also signify that the subsidy per vehicle was not high enough.
  - The above-mentioned scheme only subsidized drivers buying new vehicles, affording no compensation for those who wanted to scrap their vehicles. For truck drivers who were running a failing business, the 12/18% subsidy was not even sufficient to compensate the increased cost of buying a new truck due to the appreciation of the Japanese Yen.<sup>6</sup>
  - Apart from raising the replacement subsidy amount, the government should consider initiating a scrapping subsidy so that truck drivers can be compensated with a lump sum, should they want to scrap their old and dirty vehicles completely.
    - Clean Air Network's proposal for the "Scrapping Incentive"
      - i) We suggest that incentives be offered on a non-linear sliding scale, meaning that owners who take advantage of the subsidy earlier are subsidized a higher percentage.
      - ii) There should be mandatory retirement of all pre-Euro II vehicles after 20 years of use.
      - iii) Vehicles older than 15 years should be banned from entering the low emission zones.
    - Discussion with EPD officials indicates that they believe that a scrapping incentive would be ineffective because of drivers' lack of other career skills. However, based on consultation with truck drivers and study of the trucking trade, we know that a substantial number of truck drivers would be ready to retire (rather than replace) their trucks. **Most importantly, one old, dirty truck off the road is one significant source of pollution removed from our roads.** This new incentive would allow truck drivers who are running a failing business to take advantage of the subsidy and switch to another industry.
    - As opposed to other major polluters, the trucking trade is very fragmented, with most truck drivers owning their own trucks, instead of large companies owning fleets of trucks. Thus, we expect a subsidy to truck owners to meet with popular approval from LegCo.

<sup>5</sup> Source: the email reply from EPD official on Dec 2009

<sup>6</sup> Source: Oriental Daily (28 / 3 / 2010)

[http://orientaldaily.on.cc/cnt/news/20100328/00196\\_001.html](http://orientaldaily.on.cc/cnt/news/20100328/00196_001.html)





- The Government just implemented a new subsidy in July 2010 to replace commercial diesel vehicles of Euro II standard; however, that still leaves 36,800 of the oldest (i.e. pre-Euro and Euro I) vehicles, including trucks, on the roads.<sup>7</sup> The new subsidy scheme only addresses comparatively newer trucks, indicating that our government lacks a sense of priority when it comes to policy implementation. To reiterate, older trucks are the dirtiest by far.
3. Many countries have effectively tackled truck pollution. What the HKSAR government lacks is decisiveness more than anything else!
- Apart from raising the subsidy amount, the HKSAR government could provide more economic incentives and offer low interest loans alongside subsidies.
    - Texas (U.S.A.): To target pollution created by trucks, the state government provided low interest loans to help drivers buy a new vehicle. In some cases, the government bought the entire vehicle for the driver.<sup>8</sup>
    - The U.S. Environmental Protection Agency (EPA) and Port Authority of New York and New Jersey (PANYNJ) implemented a truck clean-up plan, subsidizing the replacement of 600 old trucks produced in 1993. The state governments subsidized the price of newer, cleaner trucks by up to 25% and provided low interest loans for the remaining cost of the vehicles.<sup>9</sup>

<sup>7</sup> At the commencement of the subsidy program to replace Pre-Euro/Euro I vehicles in 2007, there were 59,800 eligible vehicles on the road. By the end of the 3-year subsidy period, there were 23,000 less such vehicles, with approximately 16,000 of these vehicles replaced under the scheme. Thus, there are now approximately 36,800 pre-Euro and Euro I commercial diesel vehicles remaining on the road.

<sup>8</sup> Source: Environmental Defense Fund (EDF)  
<http://blogs.edf.org/texascleanairmatters/2010/05/21/solving-truck-pollution-at-ports/>

<sup>9</sup> Port Authority of New York and New Jersey (PANYNJ) announcement (10/ 3 / 2010)



- The Hong Kong Government is planning to set up low emission zones in the busiest corridors in Hong Kong in 2015; only clean buses will be permitted inside these zones. The government should also regulate trucks within the low emission zones to prevent heavily polluting vehicles from entering these densely populated areas.
    - Beijing (China): The Beijing government has banned trucks with heavy pollution from entering the city centre during the daytime. The dirtiest trucks are marked with a yellow label at the back and are prohibited from entering the city centre.<sup>10</sup>
    -
4. Truck emissions harm the health of truck drivers
- Diesel truck drivers, diesel mechanics, and others in professions constantly and closely exposed to diesel exhaust are up to 50% more likely to develop lung cancer.<sup>11</sup>
  - According to the Natural Resources Defense Council (NRDC) and the Coalition for Clean and Safe Ports, drivers who idle for hours in long lines are sitting in cabs with diesel PM levels 2,000 times greater than those considered acceptable by the U.S. state and federal environmental protection agencies.<sup>12</sup>
  - The California Air Resources Board found that the per mile emission rate of organic carbon and elemental carbon from a heavy duty diesel truck in congested traffic is 8.1 times higher and 1.9 times higher, respectively, than the same truck in transit. Drivers sitting in the cross-border queues between China and Hong Kong are subject to toxic levels of diesel fumes. Similarly, drivers sitting in traffic are subject to emissions build-up because of a lack of air flow, increasing their risk of heart attack, stroke, asthma, etc.<sup>13</sup>

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<http://www.treehugger.com/files/2010/03/diesel-trucks-pollution-reduction-epa-port-nyc-new-jersey.php>

<sup>10</sup> New York Times "Beijing's air is cleaner, but far from clean" (16 Oct 2009)

[http://www.nytimes.com/2009/10/17/world/asia/17beijing.html?\\_r=4&ref=global-home](http://www.nytimes.com/2009/10/17/world/asia/17beijing.html?_r=4&ref=global-home)

<sup>11</sup> Source: American Cancer Society

[http://www.cancer.org/docroot/NWS/content/NWS\\_1\\_1x\\_EPA\\_Reports\\_Diesel\\_Linked\\_To\\_Lung\\_Cancer.asp](http://www.cancer.org/docroot/NWS/content/NWS_1_1x_EPA_Reports_Diesel_Linked_To_Lung_Cancer.asp)

<sup>12</sup> Source: Natural Resources Defense Council Press Release (04 / 12 / 2007)

<http://www.nrdc.org/media/2007/071204.asp>

<sup>13</sup> Source: U.S. Environmental Protection Agency

<http://www.epa.gov/SmartwayLogistics/presentations/nescaum-041404.pdf>

