



## British Chamber of Commerce

# How much is air quality really costing us?

14<sup>th</sup> April 2010

Anthony J Hedley

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School of Public Health  
University of Hong Kong*

School of Public Health, University of Hong Kong

## A possible summary of the catastrophic problem of Hong Kong's air pollution

- Cause of a regional epidemic of respiratory and cardiovascular disease
- Failure to recognize the external costs
- Incompetent environmental management and infrastructure planning
- No prospect of significant improvement from a public health viewpoint
- Transgenerational effects on population health throughout 21<sup>st</sup> century

School of Public Health, University of Hong Kong

# Sunday Morning Post

SUNDAY, JUNE 3, 2007

## Public consultation on pollution launched Clean air options? Now, it's up to you

Mary Ann Beahz and Chester Yung

Proposals on improving air quality by a top advisory body are expected to be implemented one year after a public consultation on clean air, the environment minister said yesterday.

The Council for Sustainable Development yesterday launched a four-month public consultation on three areas - action to be taken on high air pollution days, energy conservation and road pricing mechanisms.

Speaking after the launch ceremony, Secretary for Environment, Transport and Works Sarah Liou Suetung said the proposals were only suggestions and the public could voice their opinions.

Dr Liou said the Transport Department would conduct a study on the impact of road pricing on traffic flow. The study is expected to be finished this year.

Council vice-chairman Edgar Cheng Wai-kin said the council was focusing on road pricing and the two other areas because they were "closely related to our daily lives".

The council hopes about 100,000 people will respond to a 24-item questionnaire. The consultation ends on October 15.

Forums and workshops on an "invitation and response document", released together with the questionnaire, will be held with concern groups and stakeholders from next week. The council was keeping an open mind on road pricing, members said yesterday.

Mr Cheng said they valued "give-and-take" as the council can put forward recommendations based on the views collected.

Chandran Nair, convener of the council's support group on better air quality, said the council did not have a "pre-determined notion of what the policy on road pricing should be".

The council had already acknowledged that road pricing was an "economic instrument" to tackle air pollution.

"But does it have a fixed position as to how it should be transferred into policy? Not yet, because it wants to engage the community in a bottom-up way to discuss this and inform people of the difficult trade-offs," Mr Nair said.

He said the issue of road pricing was controversial "everywhere".

"Everyone is talking about the London success story, but before the mayor of London, Ken Livingstone, made it a policy he was the most unpopular person in the whole of the UK," Mr Nair said.

"But he said: 'I'm the mayor, I'm going to do this despite what the government thinks'."

The questionnaire asks people how strongly they agree or disagree that road pricing should be part of government policy.

On air pollution alerts, Otto Poon Lok-to, chairman of its strategy sub-committee, said the issue was "not so much about how many days alerts happen".

"It is sending the signal to everyone in our community that we have a serious problem that affects the health of people," he said.

The questionnaire asks people whether they prefer a colour-coding or a number-coding scheme, and how long of an advance notice should be given.

The council also wants public views on what they would be prepared to do to save energy.

It also is asking what things should be made mandatory, and the sorts of policies people would support to encourage energy efficiency.

"There is a lot of learning within the community, within the policymakers."

"But we have to invest in the future now," Mr Poon said.

### Pollution proposals

- Use of colour-coding or number-coding scheme for high air pollution days.
- Cancellation of events involving large crowds on high air pollution days.
- Road pricing should be part of government policy to address air pollution.
- Pollution output of vehicles and driving time should be considered when determining fees for road pricing.
- If road pricing is introduced, government should reduce fuel or road taxes.
- Street lighting should be turned off when there is little traffic.
- Disrupt off-peak electricity for consumers.

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## Health for all in 21<sup>st</sup> Century

The human right to

Clean Water



Clean Air

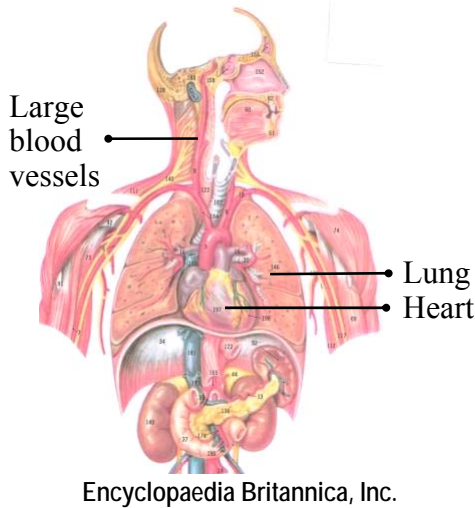


Clean Food



School of Public Health, University of Hong Kong

## The Silent Epidemic: Air pollution targets vital organs



Encyclopaedia Britannica, Inc.



School of Public Health, University of Hong Kong

# THE WALL STREET JOURNAL.

WJSJ.com

**ASIA**

VOL. XXXII NO. 137 TUESDAY, MARCH 18, 2008

## Olympics panel warns of pollution dangers

**Top committee says Beijing's air quality poses risks to athletes**

By SKY CANAVES

In the latest blow to China's Olympic plans, the International Olympic Committee, citing the results of its own medical research, said that air pollution could pose a risk to the health of athletes who participate in endurance events such as the marathon and triathlon at the Summer Games in Beijing.

The committee's medical commission recently analyzed air-quality data recorded by the Beijing Environment Protection Bureau in August 2007, when test athletic events were held in the Chinese capital. The medical commission found that outdoor endurance events—defined as those that include at least an hour of continuous, high-intensity physical effort—may pose some risk to athletes in Beijing. The committee didn't elaborate further on



Olympic organizers have repeatedly sought to allay fears on pollution in Beijing.

the specific risks involved.

The announcement of the results marks the first time the committee has made a concrete admission that Beijing's pollution could harm Olympic athletes. Last year, Jacques Rogge, committee president, said that out-

door events may be postponed if there is severe pollution during the Games, scheduled Aug. 8 to Aug. 24. In addition to the marathon and triathlon, pollution in Beijing could affect several lesser-known outdoor events: race walking, marathon swim-

ming, road cycling and mountain biking, the medical commission said.

Even before the committee released its findings, athletes had expressed serious worries about air quality in Beijing. Last week, marathon world-record holder Haile Gebrselassie announced that he wouldn't compete in the marathon at the Beijing Olympic Games, citing concerns over pollution levels. In November, Justine Henin, the world's top-ranked female tennis player, withdrew from a competition in Beijing because of the pollution and has voiced continuing concerns about the city's air quality.

Organizers have repeatedly sought to allay fears on pollution in the capital. Chinese authorities have ordered factory closures in the provinces surrounding Beijing and will introduce strict traffic-control measures during the Olympics. Beijing organizers couldn't be reached for comment on the announcement.

The British Olympic Association, which has been testing a mask that could be worn by its athletes during training in China this summer, said despite its own preparations, it re-

mains confident China will take the necessary steps to make the air clean enough for safe competition.

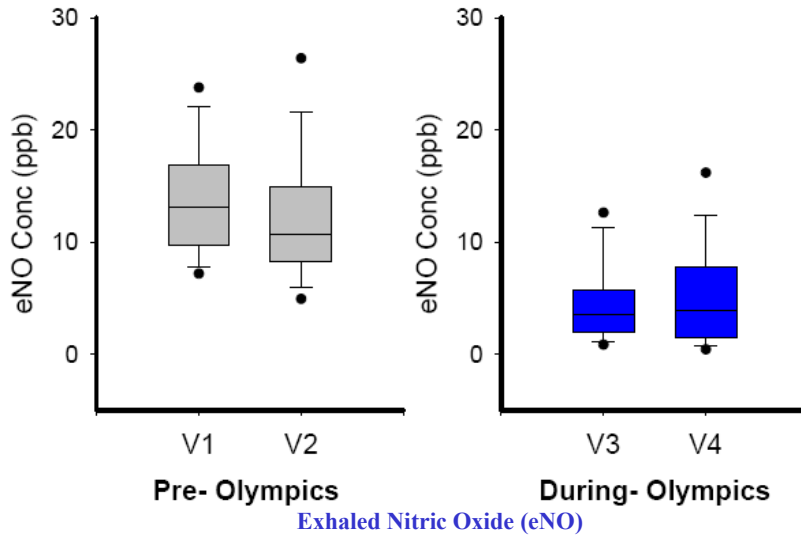
A spokeswoman for USA Track & Field, the national governing body for those sports, said the report from the IOC had no impact on its preparations. "The USATF has acknowledged the potential issue, and athletes are preparing accordingly," she said.

In its statement, the committee said it would coordinate with international Olympic federations for procedures including "daily monitoring of air quality and weather condition...a reporting process from the Beijing Environment Protection Bureau to the IOC and relevant sports federation, and a joint IOC-sports federation decision to postpone the event if necessary."

Whether such measures will be sufficient remains a question. "There's no magic wand you can wave and suddenly reliably change the quality of air in a region," says Anthony Hedley, chairman of the department of community medicine at the University of Hong Kong. "But there is a very real risk that the health of some athletes will be impaired."

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## Olympic clean up reduced lung inflammation



Zhang J et al. 2008 Rutgers University

School of Public Health, University of Hong Kong

## How much are you prepared to pay to accommodate pollution?

# South China Morning Post

南華早報

PUBLISHED SINCE 1903

HONG KONG \$7.00

FRIDAY, SEPTEMBER 4, 2006

### Businesses pay more to lure staff to polluted Hong Kong

By Justine Lau in Hong Kong

Half of Hong Kong-based companies have to pay more to lure expatriates to move to the territory because of worsening air pollution, according to a new study by Hudson human resources consultancy.

The survey, to be released this week, comes after Victor Fung, a senior Hong Kong government adviser, admitted deteriorating air quality

was affecting companies' investment decisions. "More people are now seeing Hong Kong as a hardship posting," said Gary Lazzarotto, Hudson's chief executive officer in Asia.

According to the survey of 274 senior executives, mostly from multinationals, 35 per cent of companies are having difficulties in persuading foreign workers to move to Hong Kong because of air pollution.

About 52 per cent of the respondents said they had to offer overseas executives more incentives to move to Hong Kong, including "much higher" salary packages and higher housing allowances.

"There is a fierce war for talents in Asia but Hong Kong is fighting its battle [with] one hand behind its back," Mr Lazzarotto said.

Although most of Hong Kong's air pollution is cre-

ated by factories across the territory's border in Guangdong, cars and power plants in the territory also account for a large portion.

The Hong Kong government launched an "Action Blue Sky" campaign in July to encourage less electricity consumption by turning down air conditioners and dressing down.

It also argues that in spite of pollution, international companies are continuing to

invest in Hong Kong. According to Invest Hong Kong, the government's inward investment agency, the number of Chinese mainland and Taiwan companies with regional headquarters, offices or local operations in the territory has risen from 5,414 in 2003 to 6,272 last year.

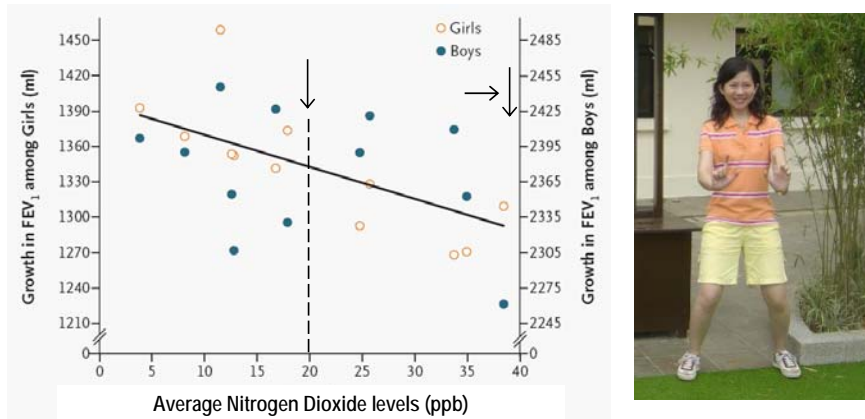
But Hong Kong's thick smog is already driving expatriates away. According to the survey, 44 per cent of

respondents said foreign workers were leaving the territory as a direct result of air pollution. Among those who were relocating to other countries, 34 per cent chose Singapore and 21 per cent went to Australia.

"If you give someone a regional role and ask them to choose to be based in Hong Kong or Singapore, most people are going to say Singapore," said Mr Lazzarotto.

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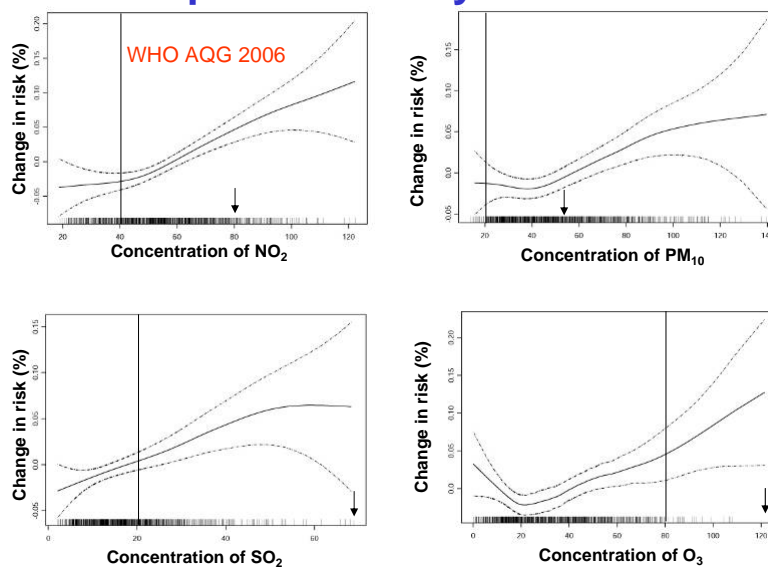
## Reduction in lung growth and function in adolescents with exposure to NO<sub>2</sub> in southern California



Gauderman WJ et al. *New England Journal of Medicine* 2004; 351:1057-67

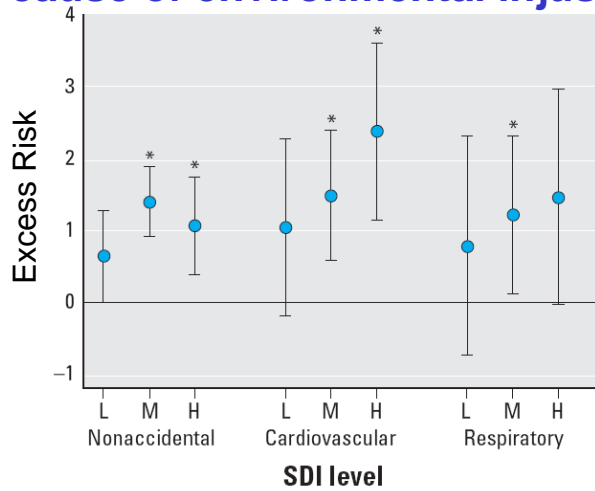
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## Respiratory disease and pollution: Hospital Authority admissions



School of Public Health, University of Hong Kong

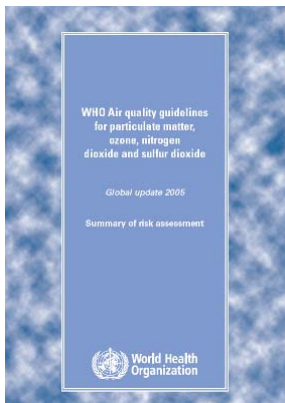
## Mortality and pollution: The poor are most at risk: a cause of environmental injustice



Source: CM Wong et al. *Environmental Health Perspectives* 2008; 116:1189-94

*School of Public Health, University of Hong Kong*

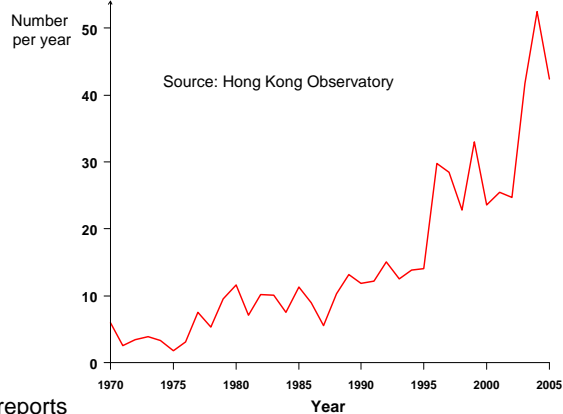
### Consistency



- WHO reviewed thousands of reports
- WHO AQG: a definitive multination consensus statement
- Asia and Hong Kong strongly represented

### Inconsistency

#### Hazy days



The HKSAR government declares it needs more information on the health effects of air pollution

*School of Public Health, University of Hong Kong*

# South China Morning Post

港聞

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THURSDAY, NOVEMBER 30, 2006

DONALD TSANG ON AIR QUALITY *Anthony Hedley*

## Polluted by misinformation

The chief executive said this week that, because Hong Kong's life expectancy is one of the highest in the world, the city is therefore the most environmentally friendly place for executives. From a public-health viewpoint, I am totally dismayed to hear such a naive, misleading and fallacious statement.

It is clear that Donald Tsang Yam-kuen is seriously out of his depth on this public-health issue, and has been very badly advised about our population's health-protection needs. His claims reveal a serious misunderstanding of the complex determinants of health and survival, and the calculation of life expectancy.

High life expectancy is mainly driven by employment and income, and usually reflects a relatively high gross domestic product per capita. Air pollution here would be unlikely to reverse our overall life-expectancy trends in the short term, but it would certainly slow the progression of gains in longevity, as acknowledged by Edgar Cheng Wai-kin, former head of the Central Policy Unit, after Mr Tsang's speech.

A reversal of life expectancy trends requires large numbers of deaths associated with a catastrophic breakdown of social structures or war, famine or widespread fatal infectious disease.

Our high life expectancy in Hong Kong is also attributable to our very low infant-mortality rate; high-quality maternal and child-health services; and the so-called "healthy-migrant" effect - given the high proportion of older people who moved here from the mainland. Migrants are fitter, and generally better survivors, than average.

The chief executive should not confuse contemporary effects with cohort effects. He could benefit from expert advice from public-health specialists; it is free of charge from our Air Quality Objectives Concern Group, unlike the costly and unnecessary consultancy on air quality which the government now intends to pay for.

Hong Kong has some of the best data worldwide on the impact of pollution on survival: there is no question that air pollution here causes premature deaths and shortens the lives of hundreds, if not thousands. The 1990 sulfur restriction in fuel was a very modest, single, air-quality intervention - but it has been demonstrated for the government's benefit that it markedly reduced age-specific mortality rates, mainly from lung and heart diseases.

Beneath the tip of the iceberg of deaths is a huge burden of ill health. In polluted environments, many more people become sick for longer periods before they die.

Mr Tsang should be aware that delays in cleaning up the air will cause large-scale impairment to health-related quality of life, including illness days, hospital admissions and time off school and work.

Pollution damages people with existing diseases - such as heart and lung problems and diabetes - as well as

otherwise healthy individuals. The Merrill Lynch financial firm did not put a "sell" notice on Hong Kong property investment recently just because of fears of a reduction in life expectancy: I believe it was deeply concerned about the health-related quality of life and healthy life expectancy.

Everyone is at risk. But we are not so much concerned with relatively well-protected executives and foreign businesses, as with the harm being caused to children and adolescents at the most formative stage of their lives. The executives to whom Mr Tsang refers will only be as good as their workforce and the next generation of workers in Hong Kong.

One question Mr Tsang should be asking is: "What will be the impact on young people of growing up in dirty air?" The answer is that, unfortunately for many of them, their lungs will fail to mature properly by the time they are about 18 years old. Poor lung growth in childhood is a major predictor of shortened life expectancy.

*Anthony Hedley is Chair Professor in Community Medicine at the University of Hong Kong's School of Public Health.*



## Visibility and pollutants in Hong Kong: our loss of visibility is due to pollution

Tsim Sha Tsui to Victoria Harbour

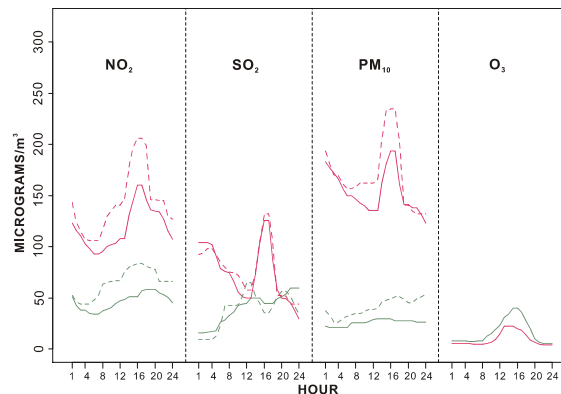
Average pollutant levels across Hong Kong



Sunday 1 August 2004



Tuesday 4 Jan 2005



Source of data: Environmental Protection Department

Legend:  
 - Better visibility (general) (solid green line)  
 - Better visibility (roadside) (dashed green line)  
 - Poor visibility (general) (solid red line)  
 - Poor visibility (roadside) (dashed red line)

Source: AJ Hedley et al. *Journal of Toxicology and Environmental Health* 2008; Part A, 71: 544-554

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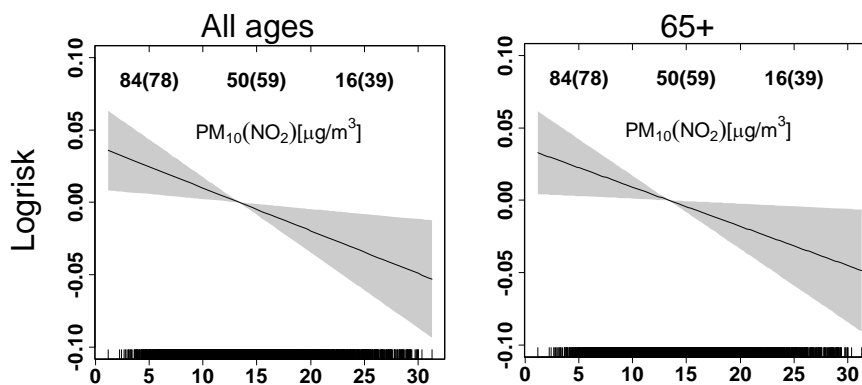
## The four-day smog in New York City in November 1966 led to a state of emergency being declared



Source: Associated Press

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## Low visibility kills: There is a strong association between daily visibility and daily deaths in Hong Kong



Source: TQ Thach et al 2010

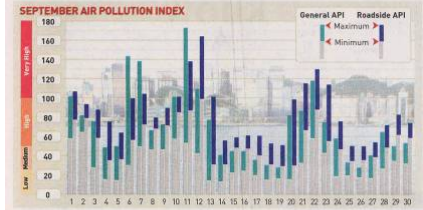
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Are daily newspapers the only platform for the dissemination of environmental science and public health?

School of Public Health

# Sunday Morning Post

A SOUTH CHINA MORNING POST PUBLICATION OCTOBER 30, 2005



## HK's smog a medical emergency, says scientist

Richard Holdcroft

As the central government this week announced sweeping new measures to combat air pollution, an internationally respected local scientist described Hong Kong's air quality as nothing short of a medical emergency.

Anthony Hedley, of Hong Kong University's department of community medicine, returned this week from a World Health Organisation meeting held in Bonn, Germany, to draw up air quality guidelines for the 21st century. Data gathered in Hong Kong featured prominently in the deliberations in Bonn.

Professor Hedley, who served on the advisory panel that reviewed the guidelines, said it was high time the government stopped pretending that pollution levels stipulated in our air quality objectives were safe. He said the new WHO guidelines, slated for release in December, are expected to be 200 to 300 per cent more stringent than those currently in use in Hong Kong.

"But even these are just numbers," he said. "It is now generally accepted that there are no safe minimum exposure levels."

Professor Hedley said that by

using these obsolete guidelines to assess proposed developments, such as new roads, Hong Kong continued to raise pollution levels dangerously high.

But he reserved his strongest criticism for those who described pollution as an unavoidable cost of progress, saying that our health was effectively being stolen and sold by powerful economic interests that exert control over the government through, for example, the functional constituencies.

"We all want progress, yes, but at what price - our children's lungs? When all the hidden costs are taken into account, this is not economic development. It is economic disaster," he said.

"We are all probably suffering

from chronic inflammatory changes in our pulmonary and cardiovascular systems. I can feel it right now, can't you? My eyes are stinging, and I am wheezing."

Professor Hedley also called on scientists in the public sector to speak out.

The government regarded academics in the private sector as "a damn nuisance", he said, so if those in the public sector could not afford to be critical "then where does the advocacy come from?"

Earlier in the week, the mainland's Academy on Environmental Planning said it estimated that more than 1,000 people die from air pollution each day in China. And the State Environmental Protection Administration announced in Beijing that government measures to combat air pollution would include blacklisting of heavily polluted cities for foreign investment.

Professor Hedley called on the Hong Kong government to show more leadership in combating air pollution together with mainland authorities.

"Nobody in the government had a clear brief to tackle air pollution," he said, and as long as this was the case he expected progress to be limited.

**"We all want progress, yes, but at what price - our children's lungs?"**

Professor Anthony Hedley  
HKU Department of  
Community Medicine

# South China Morning Post

南華早報

PUBLISHED SINCE 1903

HONG KONG \$7.00

FRIDAY, DECEMBER 17, 1993

## Children breathe easier with controls on factory fumes



Clean answer... University of Hong Kong Professor Anthony Hedley shows positive results of a survey on outdoor air quality and children's health while Environmental Protection Assistant Director Fred Tromp looks on.

By KATHY GRIFFIN

BREATHING problems among children have improved since controls were put on factory chimney fumes - but the gains were negated for children of families who smoke.

In the first local study to link better health to outdoor air quality, the University of Hong Kong estimates up to 18,000 visits to clinics were averted by having cleaner air.

Children living near industrial areas benefited in particular because they had shown higher levels of coughing, wheezing, sore throats and other ailments prior to the introduction of the controls.

But children exposed to tobacco smoke in the home continued to be at much higher risk than others to breathing problems - the first time such findings on passive smoking have been made in Hong Kong, researchers say.

About 13,500 children in Kwai Tsing and Southern districts were studied in 1989, 1991 and last year.

The controls on factory emissions came into effect on July 1, 1990, and forced

operators to use fuel with a 0.5 per cent sulphur content as opposed to 2.5 per cent before.

The earlier study found children in Kwai Tsing were 50 per cent more likely to wheeze and cough than those in Southern, but this was reduced to about 15 per cent after July 1990.

Professor Anthony Hedley of the university's department of community medicine, which conducted the study, said the results could be applied to the whole population.

"But the black area was the excess risk of living in a smoking home," he said.

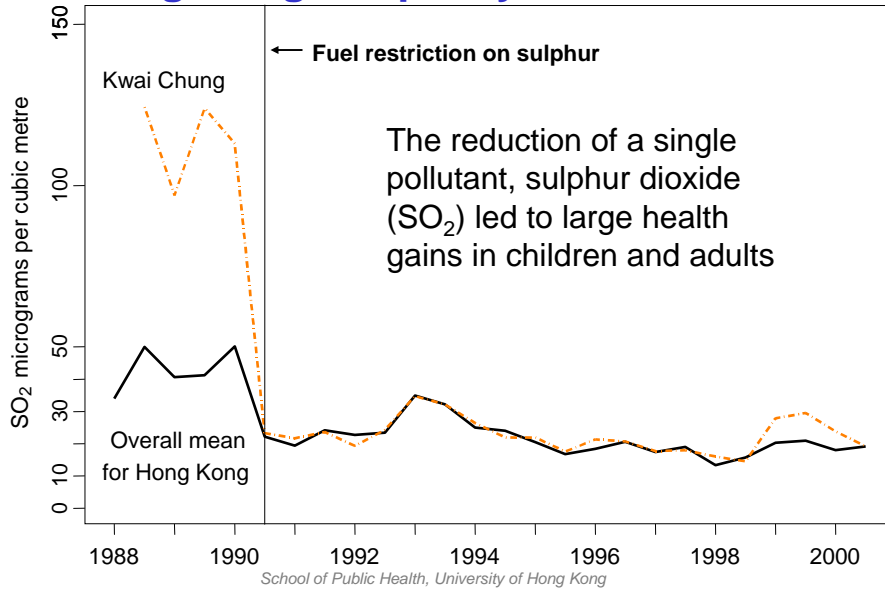
Some 44 per cent of children in Kwai Tsing and 50 per cent of children in Southern live in families who smoke.

The risk was even greater for children who smoked. Seven per cent of all the children surveyed had smoked at least once, including 29 per cent of 11-year-olds.

Assistant Director of Environmental Protection Fred Tromp said the department, which funded the \$1.4 million study, hoped to use the results to bolster efforts to control vehicle emissions.

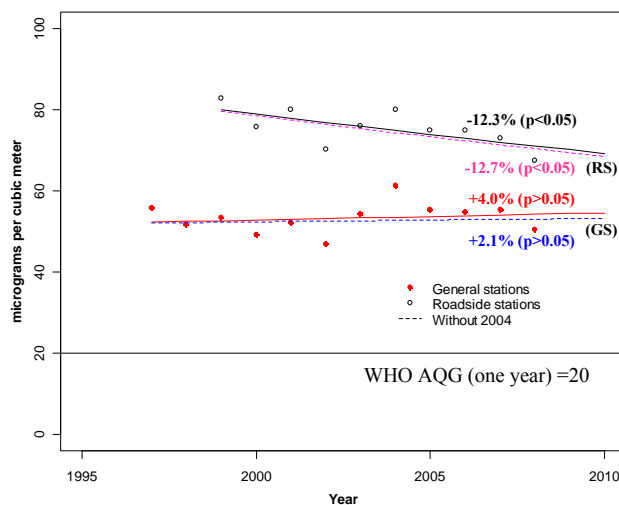
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## Cost-effective interventions: rapid results: The Hong Kong air quality intervention 1990

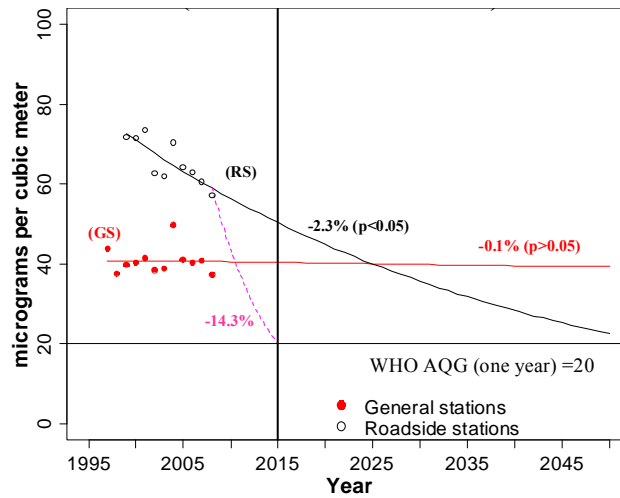


## Where are we heading with pollution?

### Respirable suspended particulates (1997-2008)



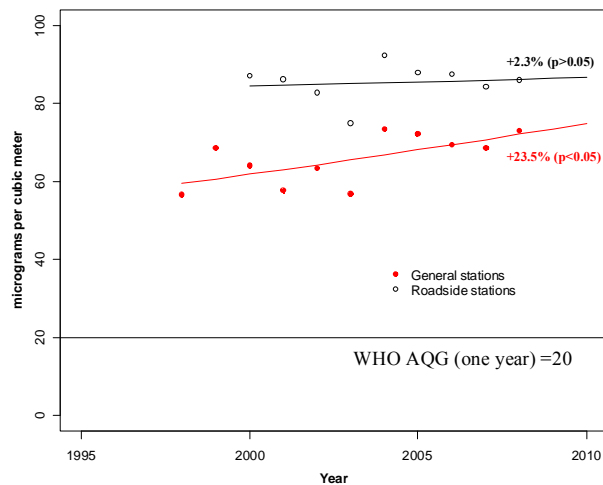
## RSP average trend in *warm season* (1997-2008) with estimation of slope required to reach WHO AQG by 2015



School of Public Health, University of Hong Kong

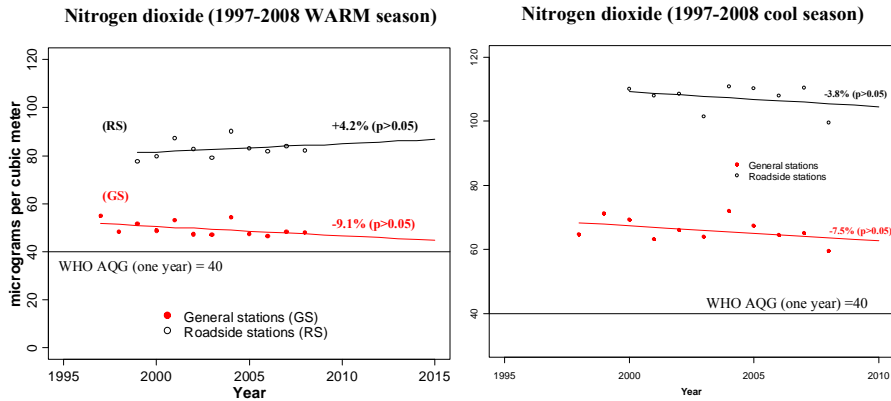
## RSP average trend in *cool season* at three roadside stations

Respirable suspended particulates (1997-2008 cool season)



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## Are Hong Kong's roadside Nitrogen Dioxide levels the highest in the world?



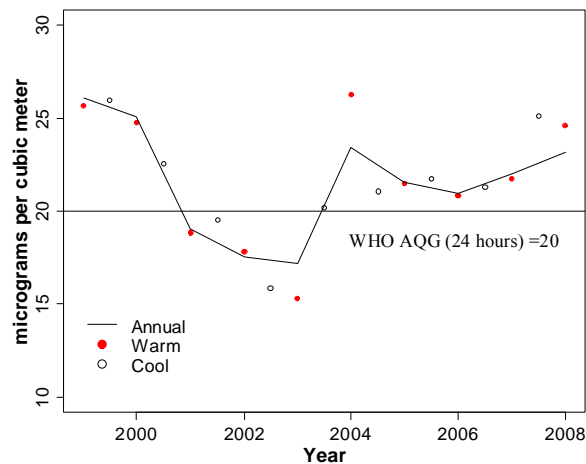
Warm season trends for roadside and general station NO<sub>2</sub>.

Annual cool season NO<sub>2</sub> levels are very high and show no significant change over the last ten years

School of Public Health, University of Hong Kong

## Annual, warm and cool season average of SO<sub>2</sub> (1999-2008) – rising again

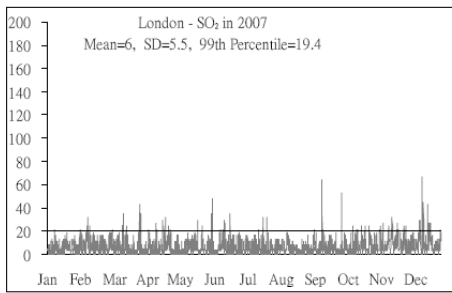
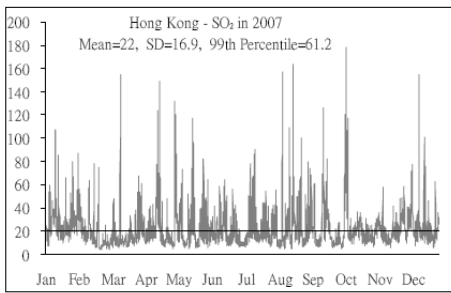
Sulphur dioxide (1999-2008) roadside stations



School of Public Health, University of Hong Kong



## Comparison of hourly SO<sub>2</sub> concentrations London and Hong Kong 2007



Data of London Marylebone Road station, a roadside station located at the centre of London with the most number of air pollutants being simultaneously measured (UK National Air Quality Archive <http://www.airquality.co.uk/index.php>)

## UK air pollution causes 50,000 early deaths a year, say MPs

Minute particles from burning fuel can shorten lives by up to nine years, according to the environment audit committee

John Vidal, environment editor  
guardian.co.uk, Monday 22 March 2010 10:52 GMT



In pollution hotspots such as London, air particles could be cutting vulnerable people's lives short by nine years, says the committee. Photograph: Oli Scarff/Getty Images

Fifty-thousand people a year may be dying prematurely because of air pollution, a influential committee of MPs has reported after a six-month investigation.

According to the environment audit committee, minute sooty particles, emitted largely from the burning of diesel and other fuels and inhaled deeply into the lungs, shortens lives by seven to eight months. In pollution hotspots like areas of central London and other cities, the particles could be cutting vulnerable people's lives short by as much as

The air pollution problem is particularly acute in London where there has been a political standoff between the mayor, Boris Johnson, and central government, with each blaming the other for inaction.

Simon Birkett, director of Clean Air for London (Cal), a small group which has led efforts to expose the full extent of air pollution and the official reluctance to address the problem, said the inquiry confirmed Cal's estimates of premature deaths.

"This report shames Britain. The government should respond immediately by giving Mayor Johnson full responsibility for complying with limit values for dangerous airborne particles (PM10s) in London; publishing its plans for complying with legal standards for nitrogen dioxide (NO2) and oxides of nitrogen (NOx); and communicating clearly estimates for the number of premature deaths due to poor air quality," said Birkett.

"Why did it take an inquiry by one of parliament's most powerful select committees to get a government minister to refer, for the very first time, to the possibility of 35,000 premature deaths in the UK in a year due to air pollution?" he asked. "Why has the government never published an estimate for the number of premature deaths due to long-term exposure to dangerous airborne particles? Before the inquiry, the highest government number we had heard before was "up to 24,000 deaths per year."

Environment groups said the report showed the folly of trying to expand Heathrow airport with a third runway. Geraldine Nicholson, from the No third runway action group, said: "The air quality limits have, in recent years, been consistently exceeded in the area around Heathrow airport and will not be met in 2010 or the foreseeable future."

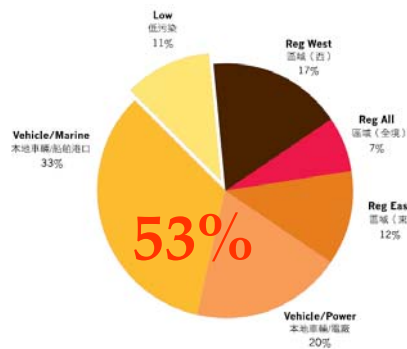
Source: <http://www.guardian.co.uk/environment/2010/mar/22/air-pollution-deaths>

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## Hong Kong makes a large contribution to PRD pollution



Shipping in Lamma Channel

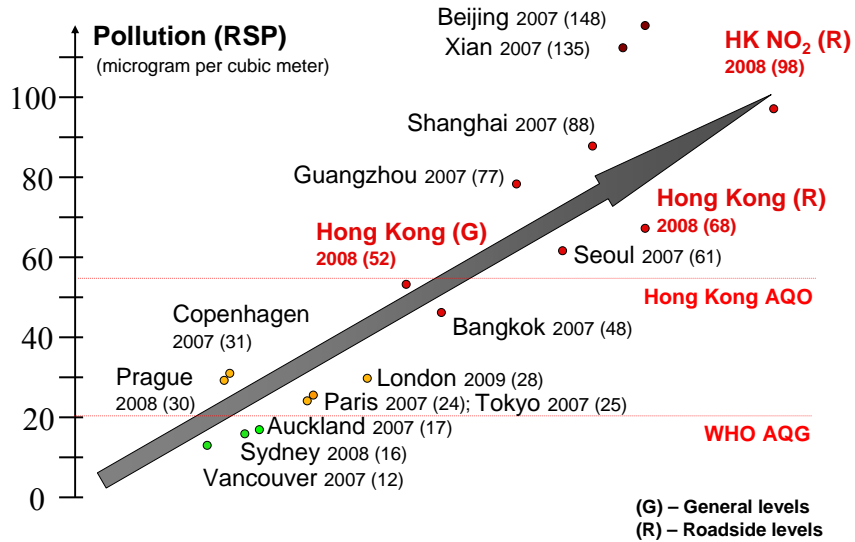


Percentage of total days of the year that each mode was dominant

Source: A Lau et al. Relative significance of local vs. regional sources: Hong Kong's air pollution, HKUST, 2007

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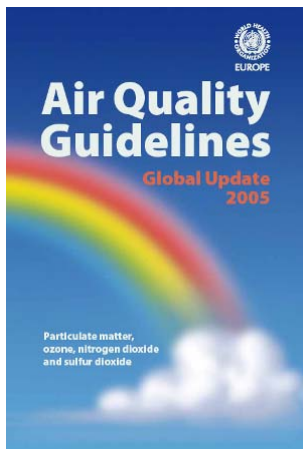
## HONG KONG IS WORSE THAN MOST CITIES



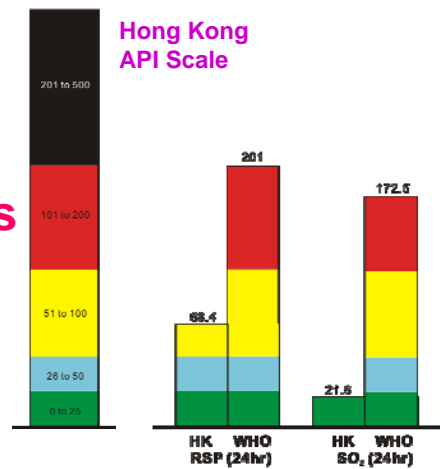
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## The Hong Kong API is useless for risk communication

### Example of API calculation using HKAQO and WHOAQG at Central/West station; Monday, 8 Jan 2007 at 0:00

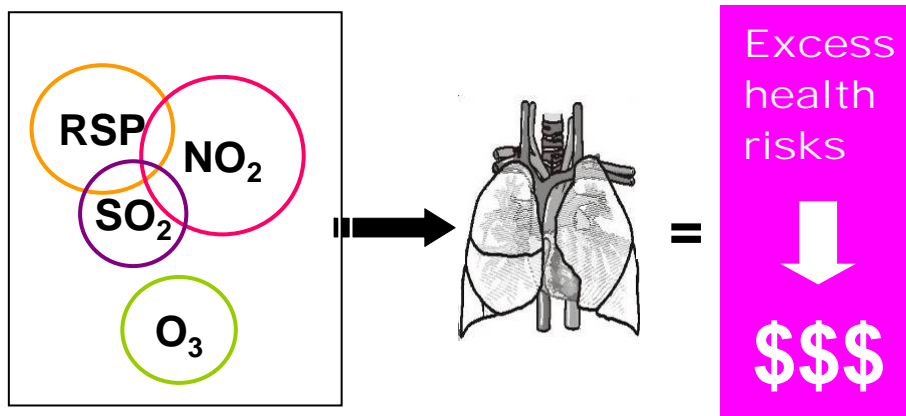


versus



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## Pollution = Health Effects = Costs



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## The HEI Environmental Index: a barometer for the health risks of Hong Kong

<http://hedleyindex.sph.hku.hk>



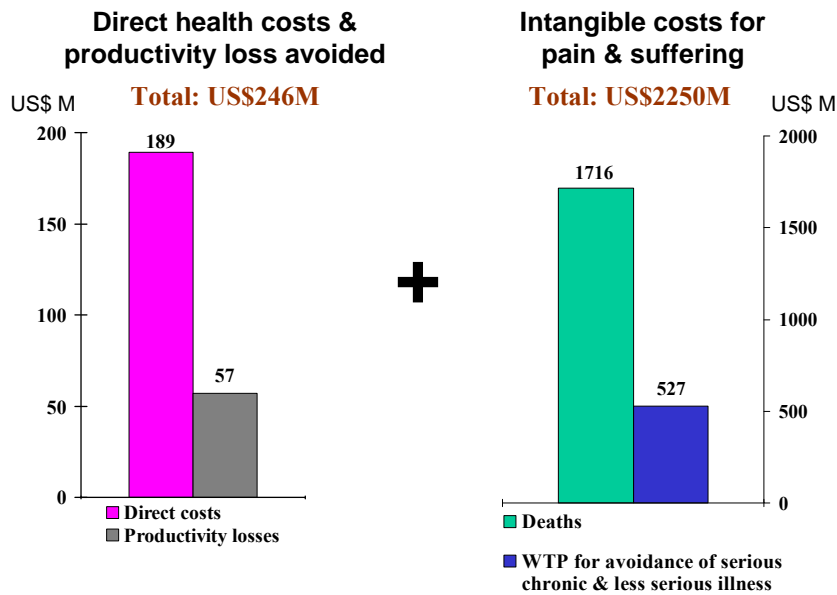
SCHOOL OF PUBLIC HEALTH  
THE UNIVERSITY OF HONG KONG  
香港大學公共衛生學院



思匯  
CIVIC EXCHANGE

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## Annual \$ Value of air quality improvement



January 12, 2009

### Hedley Index angers Hong Kong's top green official, Edward Yau

At "The Air We Breathe – Public Health Dialogue"  
by Civic Exchange  
January 10 2009



From Google:

<http://guynewey.wordpress.com/2009/01/12/hedley-index-angers-hong-kongs-top-green-official-edward-yau/>

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## Clean air: “A long term aspirational goal”

- Our minister for the environment has summed up the government’s policy and lack of political will on air quality:

- Achieving cleaner air is

**“a long term aspirational goal”**

*Edward Yau Tang Wah*

- ***This is a recipe for impaired health related quality of life for Hong Kong children and signals a serious lack of accountability***

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## How we distorted the WHO advice: WHO AQG and IT and the proposed HKAQO (shaded area) modified with more exceedances

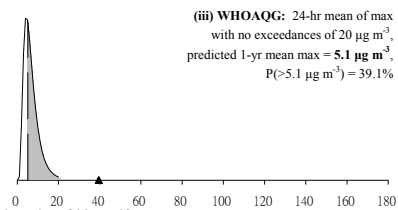
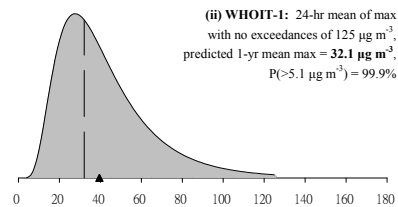
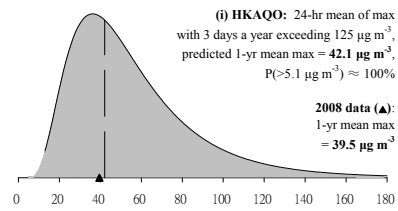
Pollutants	Averaging Time	IT-1		IT-2		IT-3		AQG	
		µg m <sup>-3</sup>	Ex	µg m <sup>-3</sup>	Ex	µg m <sup>-3</sup>	Ex	µg m <sup>-3</sup>	Ex
PM <sub>10</sub>	24-hour	150	3	100	3→9	75	3	50	3
	1-year	70	0	50	0	30	0	20	0
PM <sub>2.5</sub>	24-hour	75	3→9	50	3	37.5	3	25	3
	1-year	35	0	25	0	15	0	10	0
NO <sub>2</sub>	1-hour							200	0→18
	1-year							40	0
SO <sub>2</sub>	10-min							500	0→3
	24-hour	125	0→3	50	0			20	0
O <sub>3</sub>	8-hour	160	0→9					100	0

“Ex” represents the number of exceedances in WHO AQG and IT; → precedes the proposed number of exceedances in HKAQO

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## Sulfur dioxide

The proposed HKAQO may lead to exceedances of WHO's most lax interim target and our present SO<sub>2</sub> level



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## The proposed new HKAQO: The EPD consultancy

- **No** exposure reduction targets with defined interventions and timelines
- **No** quantitative risk assessment for achievable avoidable morbidity and mortality
- **No** explicit health related cost benefit analysis
- **No** review for 5 years

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## Arup discounted the child health benefits over 50 years

- In their economic analysis of the costs and benefits of air pollution controls Arup discounted the benefits as well as the costs over 50 years.
- ***Hong Kong parents and children should be told this and allowed to make a choice between discounted and non-discounted benefits as the basis for environmental management***

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## The EPD proposed new HKAQOs

The lax AQOs will cause long term damage to population health extending well towards the end of the 21<sup>st</sup> century



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There is an urgent need for more research to quantify the life course impact of air pollution on the health of young children and measure the cost in terms of quality adjusted life years



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# City

SOUTH CHINA MORNING POST THURSDAY, NOVEMBER 4, 2008

www.scmp.com

## 'However many roads you build - they will fill up, usually within 18 months' Axe bypass, says ex-London mayor

Albert Wong

Construction of the Central-Wan Chai bypass would be a "complete waste of time" and only serve to increase the number of drivers in the area, according to the former mayor of London, Ken Livingstone.

"Ideally, it will fill up in two years, it might fill up in two months," Mr Livingstone, noted for his controversial introduction of a congestion charge to cut traffic levels in central London, said in an interview with the South China Morning Post.

Mr Livingstone, who visited Hong Kong last week at the government's invitation to exchange views on urban environmental policies, said he had expressed his views on the matter to officials.

"It is a city as densely populated as London, New York or Hong Kong, there is a potential to make the road system and it will fill up," he said.

"Transport planners have known since 1939 that however many roads you build - they will fill up, usually within 18 months or two years... If you take the (existing) capacity out, the number of people driving goes down. If you put it up, the number of people driving goes up."

"When you look at any like Hong Kong, especially when you've 100 per cent of the roads you need, it's about using them more sensibly."

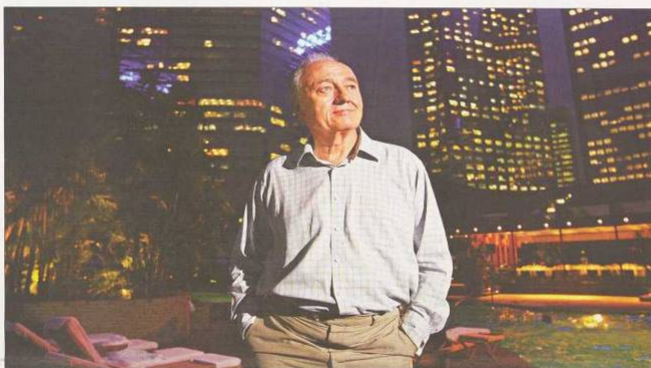
As the first mayor of London, a post created in 2000, Mr Livingstone credits his congestion charge for the re-election in 2004 - although he admits some people will never forgive him for it.

Since it was introduced in 2003, every second import by Transport for London (TfL) on the successful reduction in congestion, has been countered by alternative reports by various automobile associations that claim the figures are "spin".

Businesses in central London also complained that increased delivery costs and delayed product sales on heavy traffic in the area.

The controversy was fuelled when TfL reported in August that while the volume of cars entering central London was down 21 per cent since the charge started in 2003, congestion - measured by journey times - was back to 2004 levels. TfL maintained this was due to roadworks.

In Hong Kong, the government is planning to relieve traffic congestion by building the Central-Wan Chai bypass, scheduled for 2016, which will connect the Finlayson Street bypass to



Ken Livingstone believes Hong Kong and Shanghai have the best potential to join London and New York in the "first tier" of great cities. Photo: Dickson Lee

Central with the Island Eastern Corridor to North Point.

"Electronic road pricing", similar to a congestion charge, is also being studied, although the government has said it could only complement the bypass, not replace it, and would depend on "community support".

Mr Livingstone recognised that his advice may lead the developers, but said he felt they were out of touch with his supporters. "Some people had

and me and will never forgive me. But once the money starts to, my system gets targeted 10 per cent. And it generated my election in 2004."

A number of cities in Europe have now implemented congestion charging and New York has also been talking about the idea.

Mr Livingstone urged the Hong Kong government to share some political will. "The one thing that sticks out here about the nature of

this embryonic democracy is that everybody is so desperate to get a consensus and that everyone must be consulted."

"There are always people resistant to change... The world doesn't have the time to wait for everyone to agree."

However, Mr Livingstone said neither the pollution nor congestion in Hong Kong was so bad as in many

developed cities. He also said Hong Kong and Shanghai had the best potential to join London and New York to the "first tier" of great cities. "In both Hong Kong and Shanghai, you find people are much more relaxed about difference and diversity," he said.

Mr Livingstone recently lost the mayoral election to Tony Juno Sousa but plans to run for election again in 2012, in time for the Olympic Games.

### Reclamation scaled down after lawsuits

Environmental concerns over the impact of the Central-Wan Chai bypass have led the project on the drawing board for more than a decade.

The government saw the HK\$20 billion road, which would run along the harbor, as a solution to traffic congestion between Causeway Bay and Central, where some roads are carrying 20 per cent more traffic than their design capacity.

A transport study estimated journey times between the two spots would lengthen from 15 minutes to 45 minutes by 2026 without the bypass.

The government said the design bypass was a zero-sum game for electronic road pricing, under which road users are charged if they enter a busy area. Many experts believe road pricing would help control traffic, but the government said road users had to be offered an alternative to 20th thoroughfares at Causeway Bay Central, the current road and the outer road.

The bypass, originally scheduled to be built by 2010, was repeatedly stalled by environmental activists.

The High Court ruled in 2004 that harbor reclamation could only take place if overriding public need was proved. The government has since the time of the 10th anniversary reclamation required for the bypass and had many consultations. Work will begin next year.

Antia Lam

Antia Lam

Antia Lam

Antia Lam

## The Hong Kong-Macao-Zhuhai Bridge: A new vector for traffic pollution and illness



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## The HZMB EIA

### ***A judicial review***

- The JR application claims violation of the Technical Memorandum and Study Brief
- No account taken of increased traffic flows
- No health risk assessment

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## What is going on in air quality management in Hong Kong?

- A systemic problem in governance
- High and increasing pollutant levels
- A regional pandemic of heart and lung disease
- Lack of health protection
- No cross-sector collaboration
- *No governmental health authority with responsibility or advisory role*
- *No significant progress in public health protection*
- *High community-wide costs*

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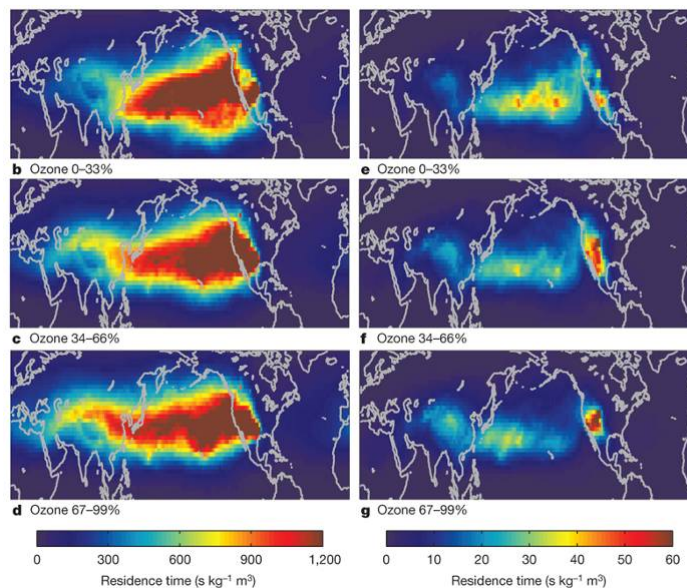
## Who is bearing the external costs of Hong Kong and China's pollution?

- Children
- Everyone else
- The North American continent



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## East Asia exports ozone to North America



Source: Cooper et al. Nature 2010 doi: 10.1038/nature0870808

## What can be done?

The need for *accountability*

- Restructure the EPD with full professionalisation of the senior directorate
- Create an independent multidisciplinary advisory mechanism
- Implement a robust review and accountability mechanism
- Recognize our duty of care to the next generation

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# South China Morning Post

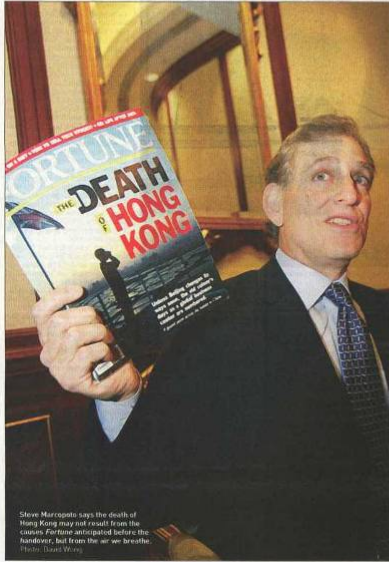
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THURSDAY, JANUARY 15, 2008



Steve Marcopoto says the death of Hong Kong may not result from the causes Fortune anticipated before the handover, but from the air we breathe. Photo: David Wong

## AmCham chief sees foul air as the death of HK

Piracy fight, better delta ties needed to woo investors, he says

Dennis Eng and Jimmy Cheung

Combating piracy and air pollution is key to enhancing Hong Kong's attractiveness to foreign investors, the new chairman of the American Chamber of Commerce said.

Steve Marcopoto, who is also president and managing director of Turner Broadcasting System Asia Pacific, added that the chamber needed to boost its business ties with the Pearl River Delta.

"Let's add to the Pearl River Delta's understanding of what can be done to improve our air, and let's be a force in the context of regional awareness and climate-to-home voluntary actions, rather than just another visit that complains to the government," said Mr Marcopoto, who succeeds maritime lawyer Jan Zinke as chairman. The chamber announced yesterday it planned to establish a taskforce to explore how it could better contribute to improving the environment. Mr Marcopoto stressed there was "a sense of urgency" in tackling this issue.

Chamber visits to the mainland, especially Beijing and Guangdong, to further US business interests are also likely, although more have been scheduled yet.

Mr Marcopoto noted that co-operation with other business groups in the Pearl River Delta region was vital in the links between Hong Kong and Guangdong province were intractable.

"Hong Kong is often regarded as China's front door, which is a positive for Hong Kong," he said.

He added that the chamber had already expanded its sphere of influence to include Macau as a result of growing investment and interest from US companies in the former Portuguese enclave. However, more needed to be done on the intellectual property rights and environmental fronts. Specifically, the chairman praised recent efforts to combat piracy and enhance public awareness of the issue as "steps in the right direction". But he noted that there were still many enforcement loopholes that needed to be plugged.

Mr Marcopoto also warned that Hong Kong's overall competitiveness would be undermined if air pollution was not tackled more actively.

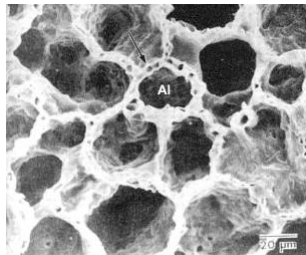
"If copyright infringement is stealing goods, our poor environment is stealing our health and our future," he said.

The death of Hong Kong may not result from the causes Fortune anticipated before the handover, but from the air we breathe."

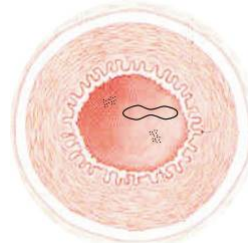
Meanwhile, Financial Secretary Henry Tang Ying-yen told lawmakers there was no need to establish a cross-departmental group to help workers who become jobless because of new government policies or measures. Responding to a Legislative Council motion urging better support of business, Mr Tang pledged to conduct detailed assessments of the impact of new measures on businesses before implementing them. The government, he said, would strike a balance between minimum market regulation and the need to protect public interest.

## Silent and unobserved injuries to sensitive tissues

Pollutant particles and gases cause an injury to lungs and arteries



The air sacs of lungs



The lining cells of arteries

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