



What We Talk About When We Talk About Air Quality





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KEY FACTS

TECHNICAL INFORMATION

Measuring Hong Kong's air pollution costs

The Hedley Environmental Index monitors and publishes in real-time the economic costs of Hong Kong's air pollution in terms of public health impacts and their monetary value. The public health impacts include premature deaths, hospital bed-days and doctor visits.

Avoidable health impacts

8 preventable deaths
467 hospital bed days
21,189 doctor visits
 from midnight to 21:00 today.

Air quality warning meter

Risk from air pollutants



24 May 2012, 22:57

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according to [World Health Organization Guidelines](#)

Current air quality

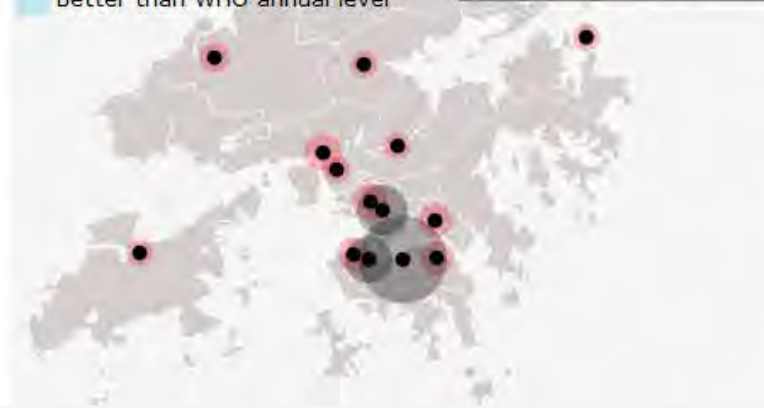
Average hourly concentration (microgram/m³) of PM_{2.5} PM₁₀ NO₂ SO₂ O₃



24 May 2012, 22:57

- Poorer than WHO short-term level
- Poorer than WHO annual level
- Better than WHO annual level

Fine particles
 WHO guideline
 Short-term: 25
 Annual: 10



Avoidable harm to the Hong Kong community

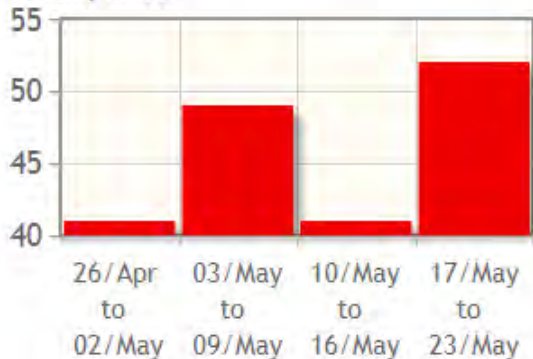


Premature Deaths



Apr
271
DEATHS
last month

Weekly totals

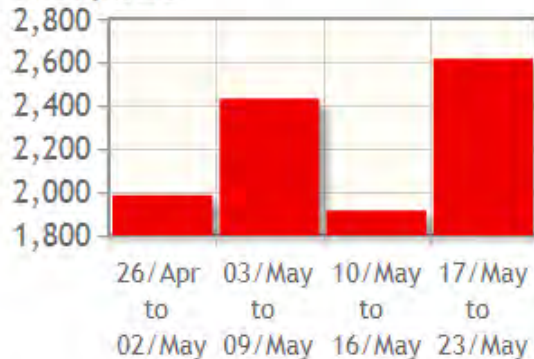


Hospital Bed-days



Apr
13,494
BED-DAYS
last month

Weekly totals

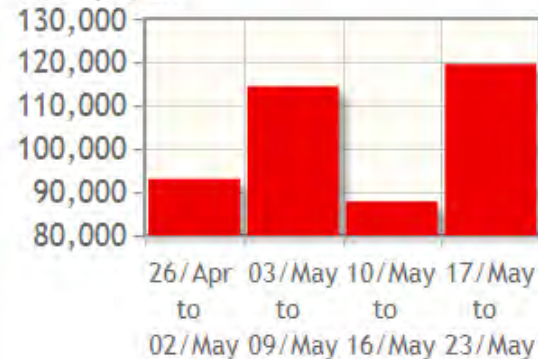


Doctor Visits



Apr
627,798
VISITS
last month

Weekly totals

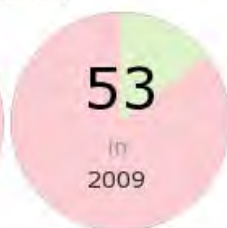


Monthly/annual pollution report ?

Clear days (below WHO short-term guideline) ?

24 May 2012

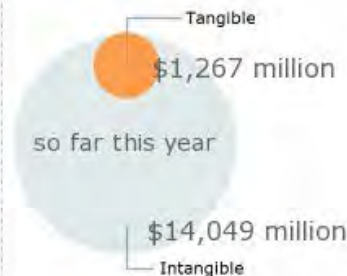
Clear days



Economic loss to the community in Hong Kong ?

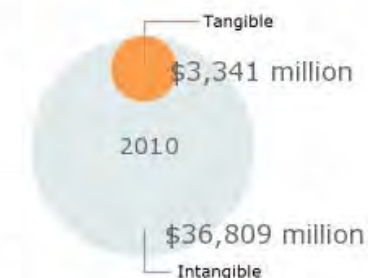
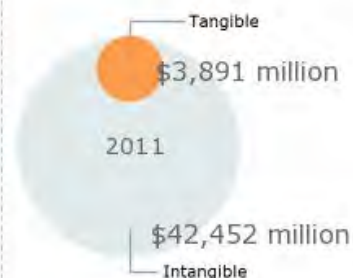
Pollution-related burden of disease and lost productivity ?

24 May 2012, undefined:02



Cumulative economic loss (HKD) since midnight today.

\$108,360,000



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Did you know?

Exposure to ambient particles during pregnancy is associated with increased risk of preterm birth, even in a region with relatively good air quality. (Atlanta, 2011)

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Founding Funder:



Fu Tak Iam Foundation Limited

Project Development:



Oregon Clean Diesel Initiative



Economics of Diesel



\$ 183 billion	Diesel contribution to American economy
\$ 175 billion	Health/environmental impacts associated with diesel engines

Economics of Clean Diesel



Concerns with John Graham

May 5, 2001

President Bush's nominee to head OMB's Office of Information and Regulatory Affairs (OIRA), John Graham, has demonstrated consistent hostility to protections for public health, safety and the environment over his career.



Graham's Nomination To Head OMB-OIRA Threatens Health, Safety and Environmental Safeguards



The appointment of John Graham at OMB would be a nightmare for anyone who cares about children's health and the environment, a polluter's dream come true.



Cost Effectiveness of Clean Diesel



Validating Regulatory Analysis: 2005 Report to Congress on the Costs and Benefits of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities



2005
Office of Management and Budget
Office of Information and Regulatory Affairs

“In this case, the data show that the EPA clean-air office has issued highly beneficial rules.”

The Tragedy of the Commons



Rational decisions by individuals acting independently will impair a shared resource



Economics of Clean Diesel



Per vehicle:

Filter costs

– \$12,000

Environmental/

Public health costs

@ 1500 hr/yr = \$ 52,000

Social Return on Investment:

Environmental/Public health breakeven

- less than 5 months



Economics of Clean Diesel



Repowering engines eliminates

- 2.4 T PM
- 328 MT CO₂
- 1210 MT CO₂e BC

Public investment

\$305,175

Annual public health/environment value

\$805,000 – \$1.9 million

Breakeven 2-6 months

Fifth year ROI 200-500% APY



How Are We Doing?

