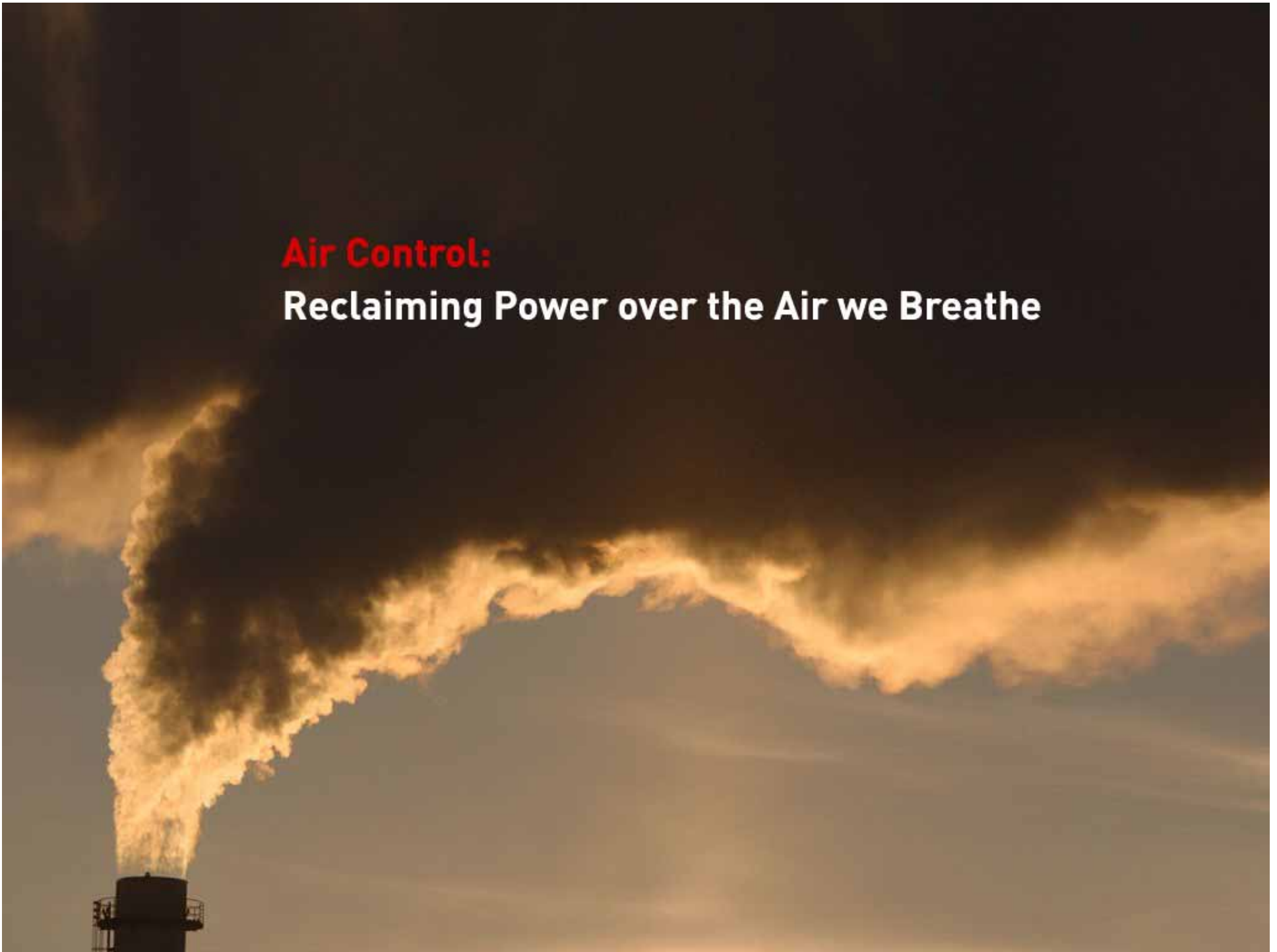
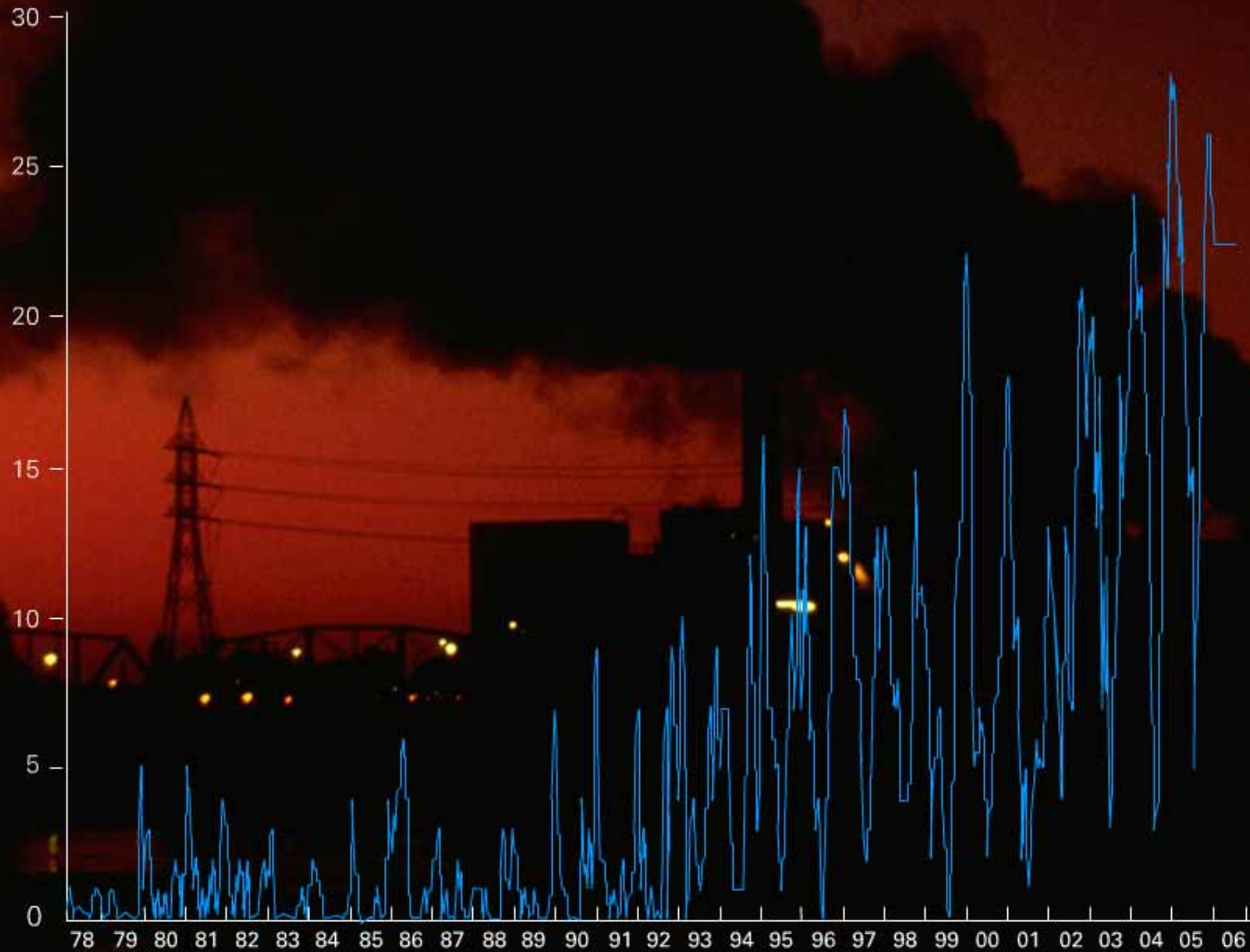


**Air Control:**  
**Reclaiming Power over the Air we Breathe**

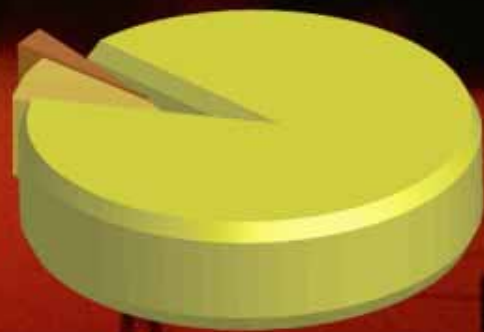


# Monthly number of HAZE DAYS (visibility $\leq 8\text{km}$ and RH $\leq 80\%$ )



# DISTRIBUTION OF HOURLY API

Roadside Stations for the Period  
October 2006 - December 2006



Severe (201-500)	= 0.00%
High (51-100)	= 91.53%
Medium (26-50)	= 7.57%
Low (0-25)	= 0.89%

General Stations for the Period  
October 2006 - December 2006



Severe (201-500)	= 0.00%
High (51-100)	= 73.18%
Medium (26-50)	= 26.37%
Low (0-25)	= 0.42%

# REASON FOR RESEARCH



# REASON FOR RESEARCH



# THREE WAYS OF UNDERSTANDING EMISSIONS

## 1. BY EMISSIONS INVENTORY [By Tonnage]



# THREE WAYS OF UNDERSTANDING EMISSIONS

## 2. BY SOURCE APPORTIONMENT AT AQMS [By Mass Concentration]

ACCOUNTS FOR 60 - 70% OF HK POLLUTION

ACCOUNTS FOR 30 - 40% OF HK POLLUTION

中環路邊空氣監測站  
CENTRAL ROADSIDE  
AIR QUALITY  
MONITORING STATION

環境保護署  
ENVIRONMENTAL PROTECTION  
DEPARTMENT



# THREE WAYS OF UNDERSTANDING EMISSIONS

## 3. BY NUMBER OF DAYS WHEN HK IS MOST AFFECTED [By Time]



**Is the number of days dominated  
by regional pollution much more  
than the number of days dominated  
by local pollution?**

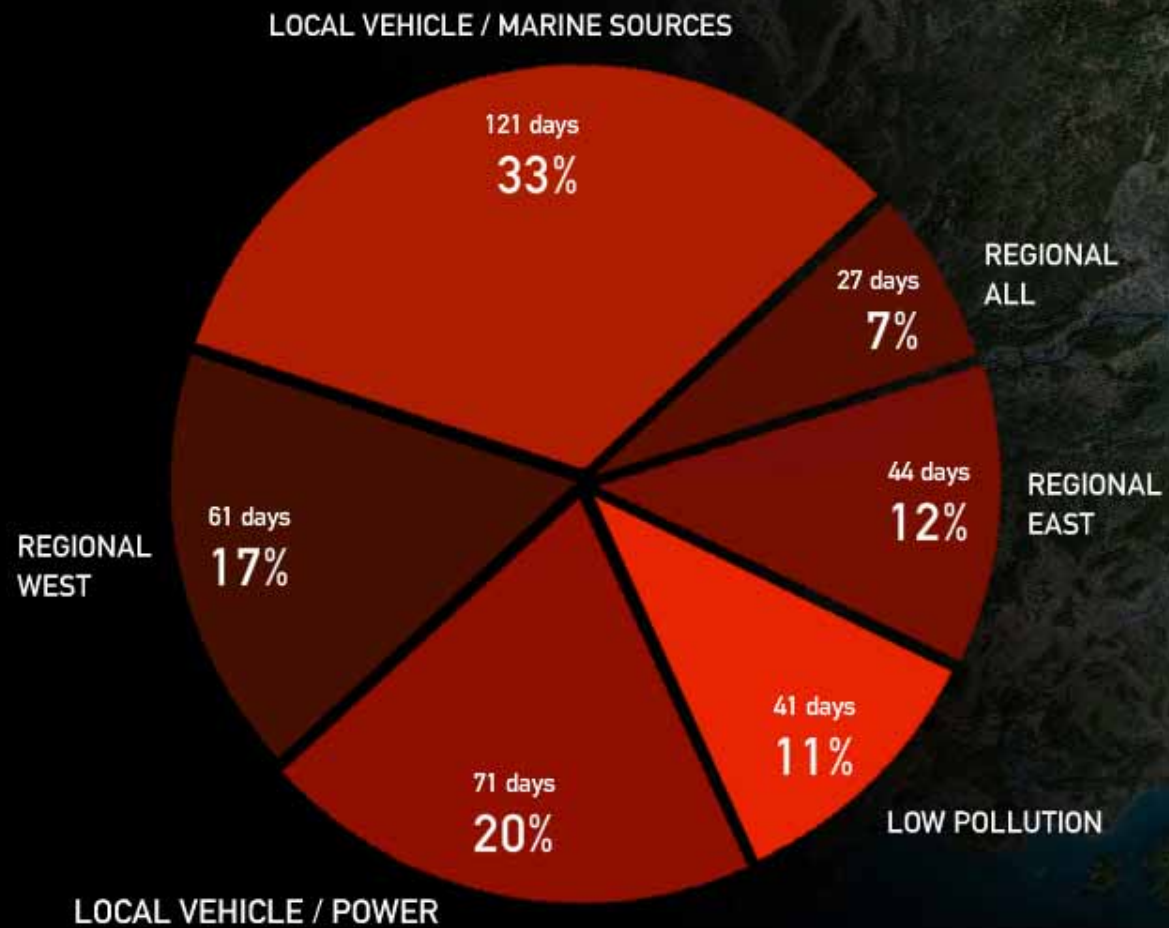


## DATA SOURCES

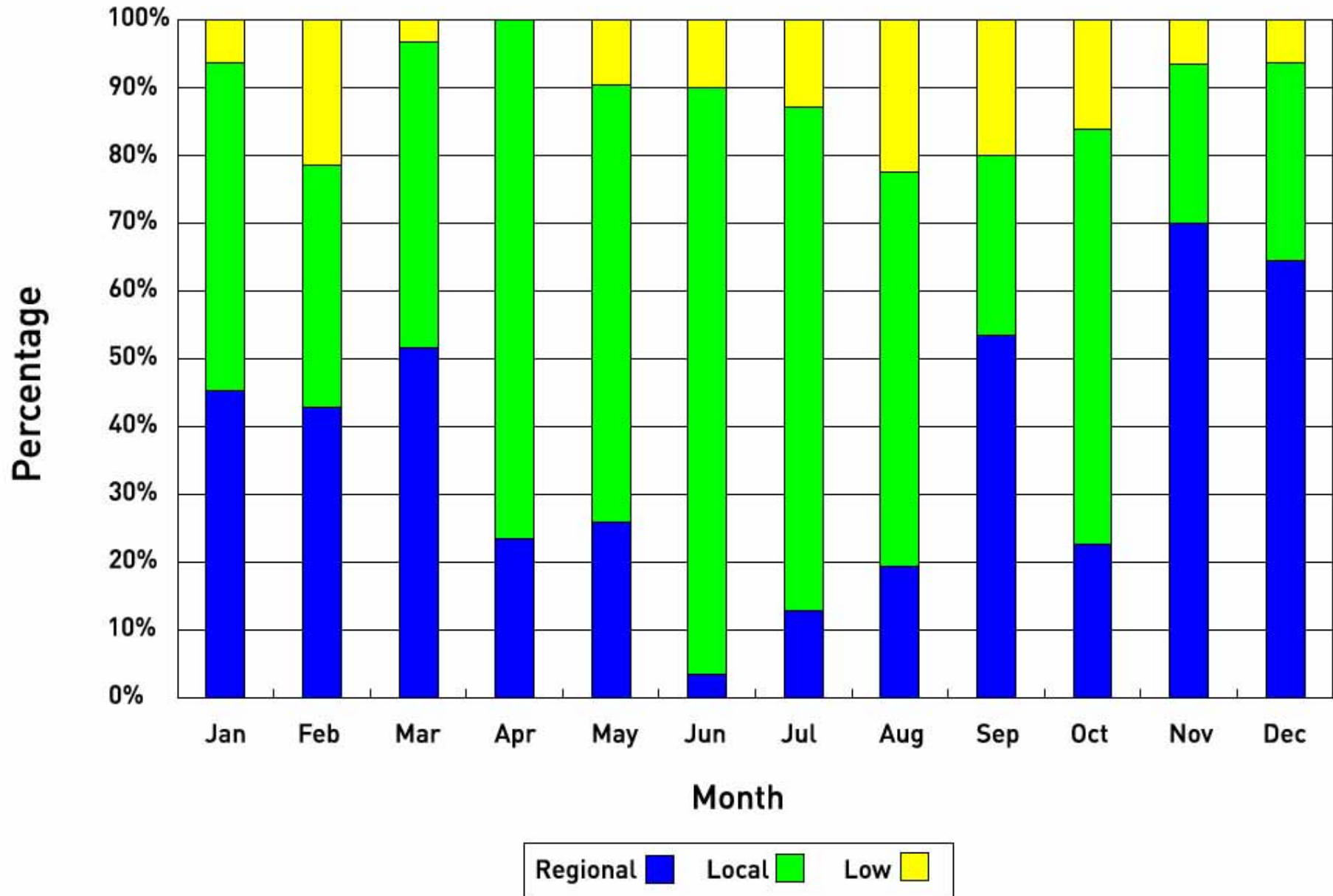
- Air Quality data from 14 Air Quality Monitoring Stations
- Data from 14 HK/PRD Regional Network
- Wind data from HK Observatory
- Chemical data from EPD Samples
- Satellite Information



# SOURCES OF POLLUTION IN HONG KONG



### Percentage grouped by source





**WHAT IS IN OUR CONTROL TO FIX?**



365 DAYS



An aerial photograph of a city skyline, likely Hong Kong, featuring numerous skyscrapers and a large body of water. A grid of thin, light-colored lines is overlaid on the entire image. The bottom portion of the image is obscured by a dark red, textured rectangular area.

**365 DAYS**

**Regional - 36%**

**365 DAYS**

**Local - 53% 192 days**

**Regional - 36%**

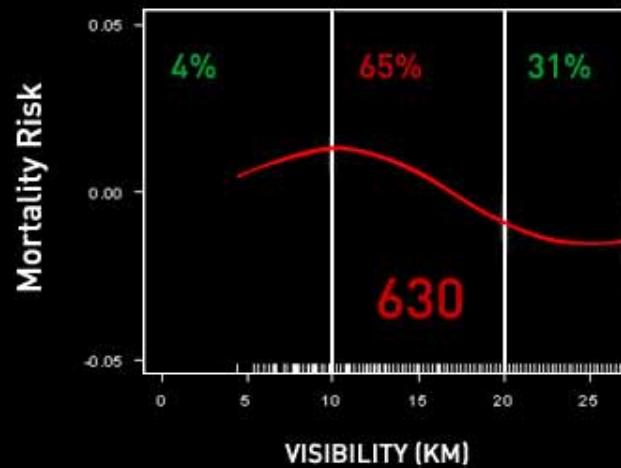
An aerial photograph of a city skyline, likely Hong Kong, featuring numerous skyscrapers and a large body of water. A grid of thin, light-colored lines is overlaid on the entire image. The bottom portion of the image is obscured by a dark red, textured rectangular area.

**365 DAYS**

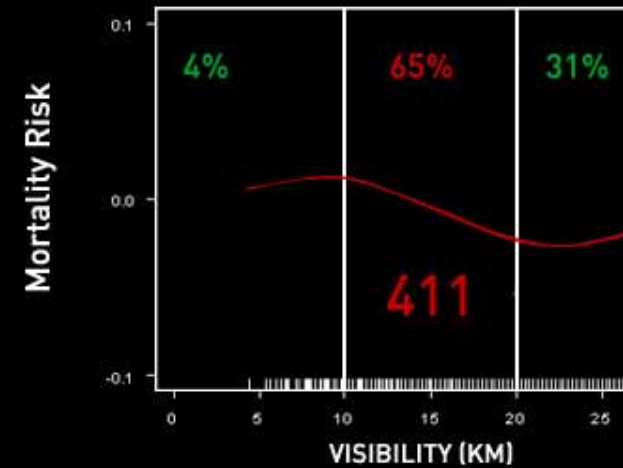
**Regional - 36%**

# INCREASED VISIBILITY REDUCES MORTALITY IN HONG KONG

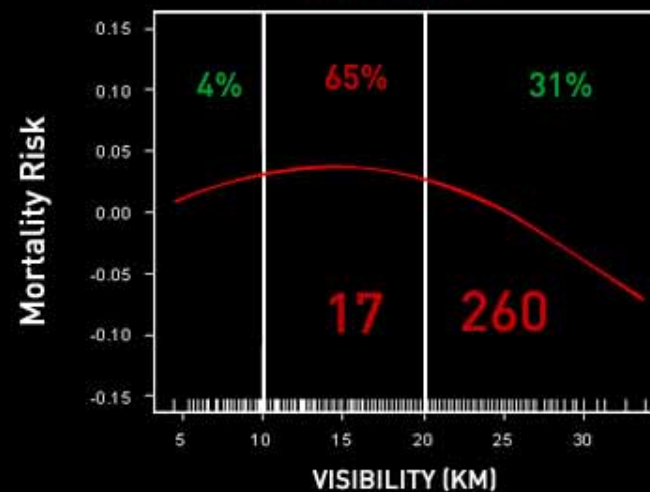
## ALL NATURAL CAUSES



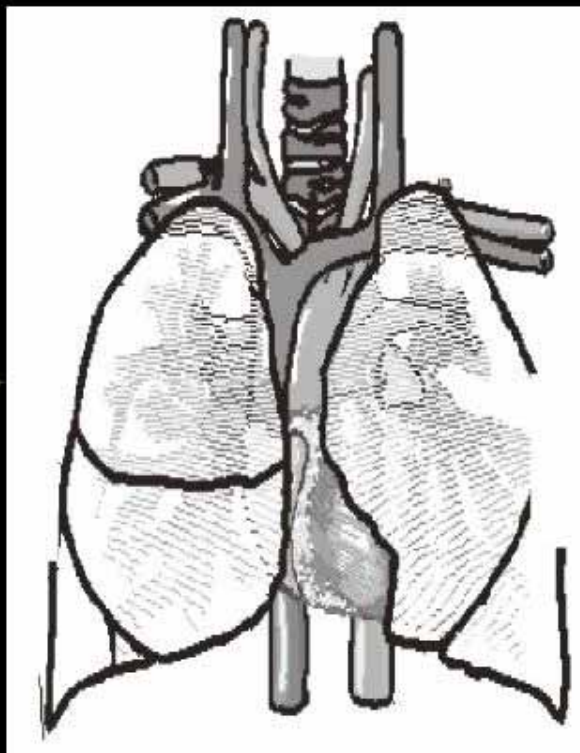
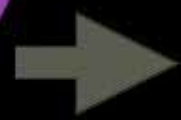
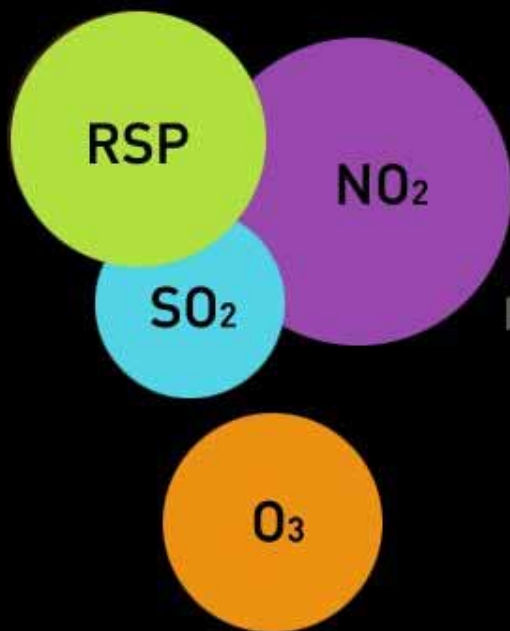
## CARDIOVASCULAR



## RESPIRATORY



# AIR POLLUTION AND HEALTH RISKS

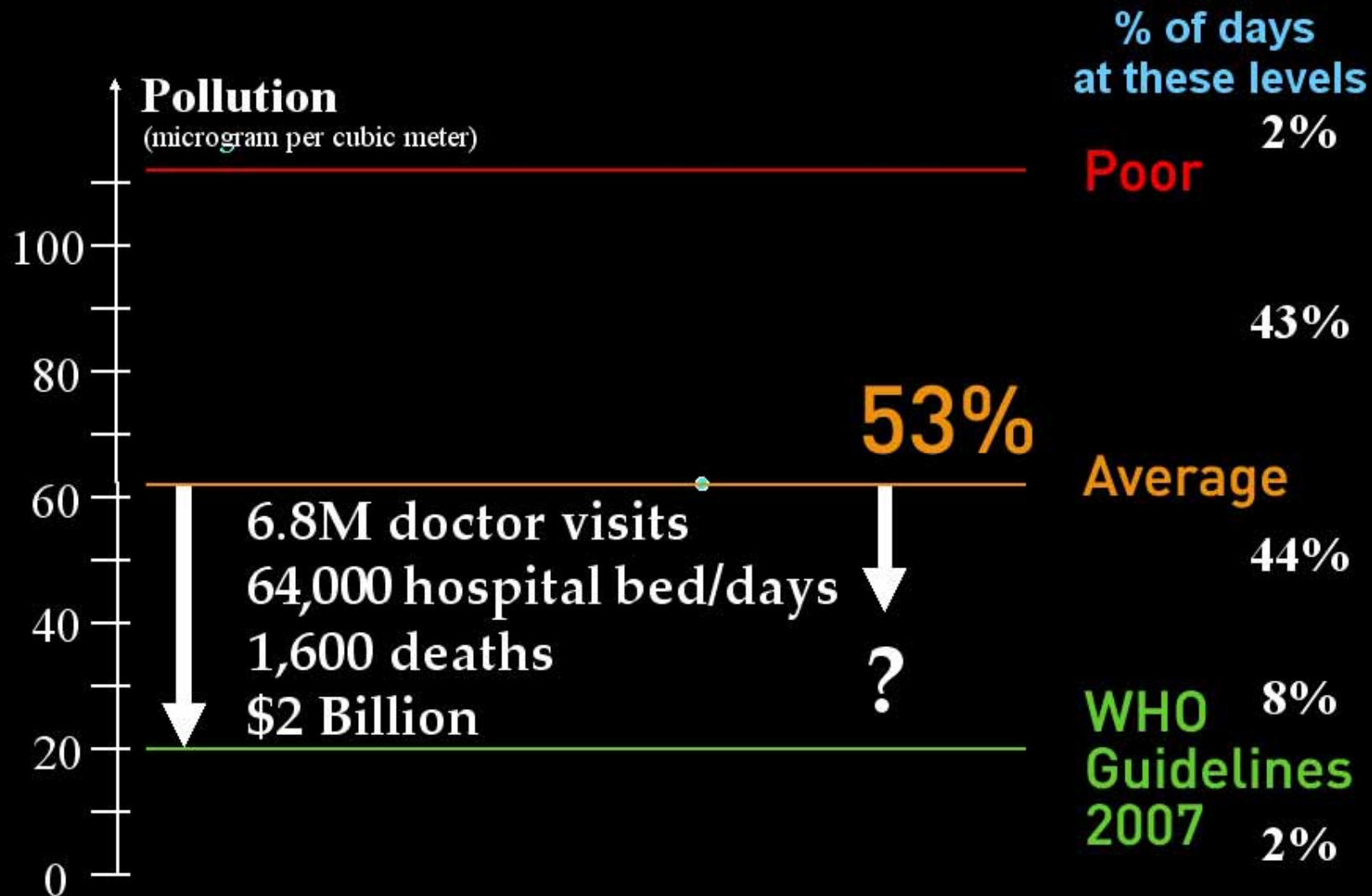


**Excess  
Health  
Risks**



**\$\$\$\$\$\$**

# THE PREVENTABLE FRACTION: THE HONG KONG CONTRIBUTION



# LOCAL SOURCES?



# VEHICULAR

Lower registration charge for low emissions vehicles

Explore adding biodiesel

Get pre-Euro, Euro I and Euro II vehicles off the road

a) Introduce a phase out scheme

b) compliment with road management methods to complement (e.g. ERP, LEZ)

Coordinate rail and bus feeder services

Manage density and traffic flow to reduce "Street Canyon Effect"



# POWER

Install FGD equipment in all power plants as soon as possible

Tighten emission caps, ensure best possible technology installed

Incentivise energy efficiency in SoC (2008)

Consider fuel mix policy (more LNG?)



# MARINE

Establish voluntary schemes to encourage lower emissions from all waterborne craft and terminal footprint such as:

- Slow down ships when approaching and leaving port
- Reduce land-based emissions at port
- Switch fuel to lower sulphur fuels

Retrofit engines of local crafts

Switch to shore-side power for ships when along side

Promote the use of shipping fuels with 1% sulphur cap worldwide

Collaborate with Shenzhen and Guangdong to operate 'green port' policies



# IMMEDIATE ACTION

## ESSENTIAL COMPLEMENTARY ACTION

Adopt and enforce WHO AQG

Devise comprehensive energy policy



365 DAYS



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# Air Control: Reclaiming Power over the Air we Breathe

