ENVIRONMENTAL POLICY IN CHINA

November 19

Chinese Politics

Deborah Seligsohn

Where is this?

Where is this?

Roaming
8:55 PM
Air Quality Index
Monitoring site nearby
南三环 1.7KM
403
Severely polluted
PM2.5 355
PM10 --
SO2 136
NO2 138
504
Beijing
US Embassy
Beyond index
Protection recommended
雾转小雨 2~10°C
2014-02-25 20:00
PM2.5 507
PM10 --
SO2 --
NO2 --
421
Beijing
Severely polluted
Protection recommended
雾转小雨 2~10°
2014-02-25 13:00

NEW YORK CENTRAL PARK AVERAGE SUSPENDED PM 800 MG/M^3

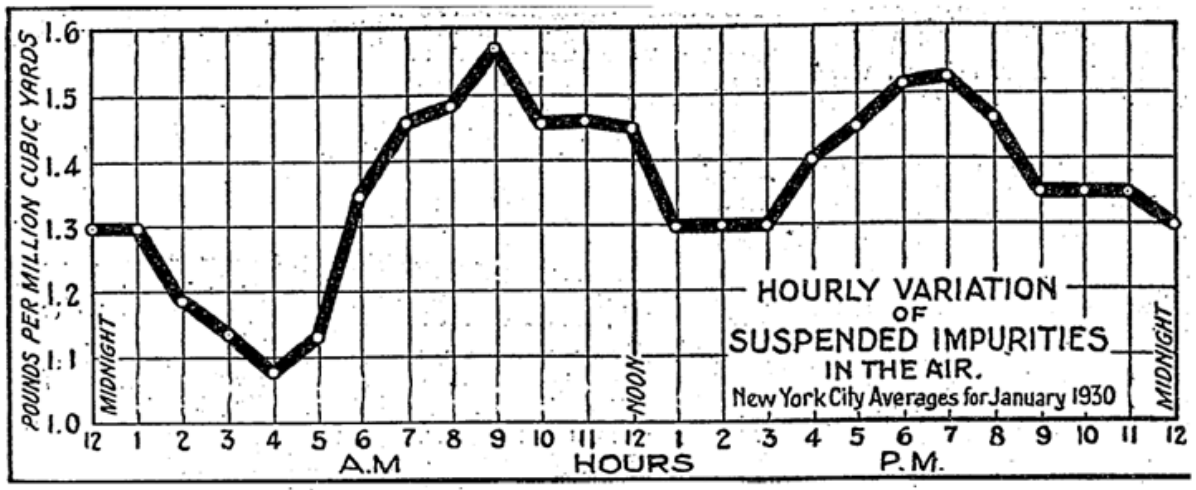
Average Diurnal PM for January 1930

FINDS CITY'S AIR PUREST AT 4 A. M.

Device That 'Breathes' in Park Records 9 A. M. as Hour of Greatest Pollution.

WORKS EACH QUARTER HOUR

61,199 Dust Particles Per Cubic Foot Is Average for January, Against 50,524 in Same Month of 1929.



HOW THE CITY'S AIR POLLUTION FLUCTUATES HOURLY.
Chart Prepared by New York Meteorological Observatory in Central Park Based on January Averages Show: the Rise in the Air's Dust Content From the Low Point at 4 A. M. to the Peak at 9 A. M.

Using a new apparatus that "breathes" the city air and registers its dust and smoke content every fifteen minutes, the New York Meteorological Observatory in Central Park has found that every million cubic yards of New York's atmosphere contained, during January, an average of 1.35 pounds of impurities. The instrument, which was installed on Jan. 1, showed the city's air to be purest at 4 A. M. and most polluted at 9 A. M., according to a report of the first month's operation made public yesterday by David R. Morris, meteorologist.

The apparatus, which is known as the Owens automatic air filter and is much used in England, keeps an automatic record throughout the day and night. It was lent by the Stevens Institute of Technology. Samples of air examined each noon by another instrument, in use at the observatory for a year, showed a higher dust content this January than last year. This year the average for the month was 61,199 particles per cubic foot, cmpared to 50,524 last year. January is usually the dirtiest month of the year.

The pollution of the air shown by the Owens filter varied during the month from 0.27 pound of impurities per million cubic yards, registered on Jan. 11, to 2.70 pounds on Jan. 27.

Mr. Morris has prepared a chart showing the average variation during the day, in January, of the air pollution. Starting from the low point at 4 A. M., when the air is at its purest, the curve gradually rises, as fires are made in homes and offices, until it reaches its peak at 9 A. M. It declines until after noon, and does not begin to rise again until 3 o'clock, probably because the home fires are started up again in preparation for the evening. The second peak is reached at 7 P. M., and thereafter the curve declines almost steadily, with a slight retardation between 9 and 11.

The air filter "breathes in" two liters of air every fifteen minutes. The air is sucked in through a small tube which hangs out the window. It passes through filter paper, leaving its dust and smoke in a small, round mark the size of a small pea.

Ninety-six of these marks are left around the edge of a circular filter paper. They are compared with a series of sixteen standard shades, each of which represents a certain percentage of impurity, and the amount of dust per million cubic yards is then calculated.

The New York Times
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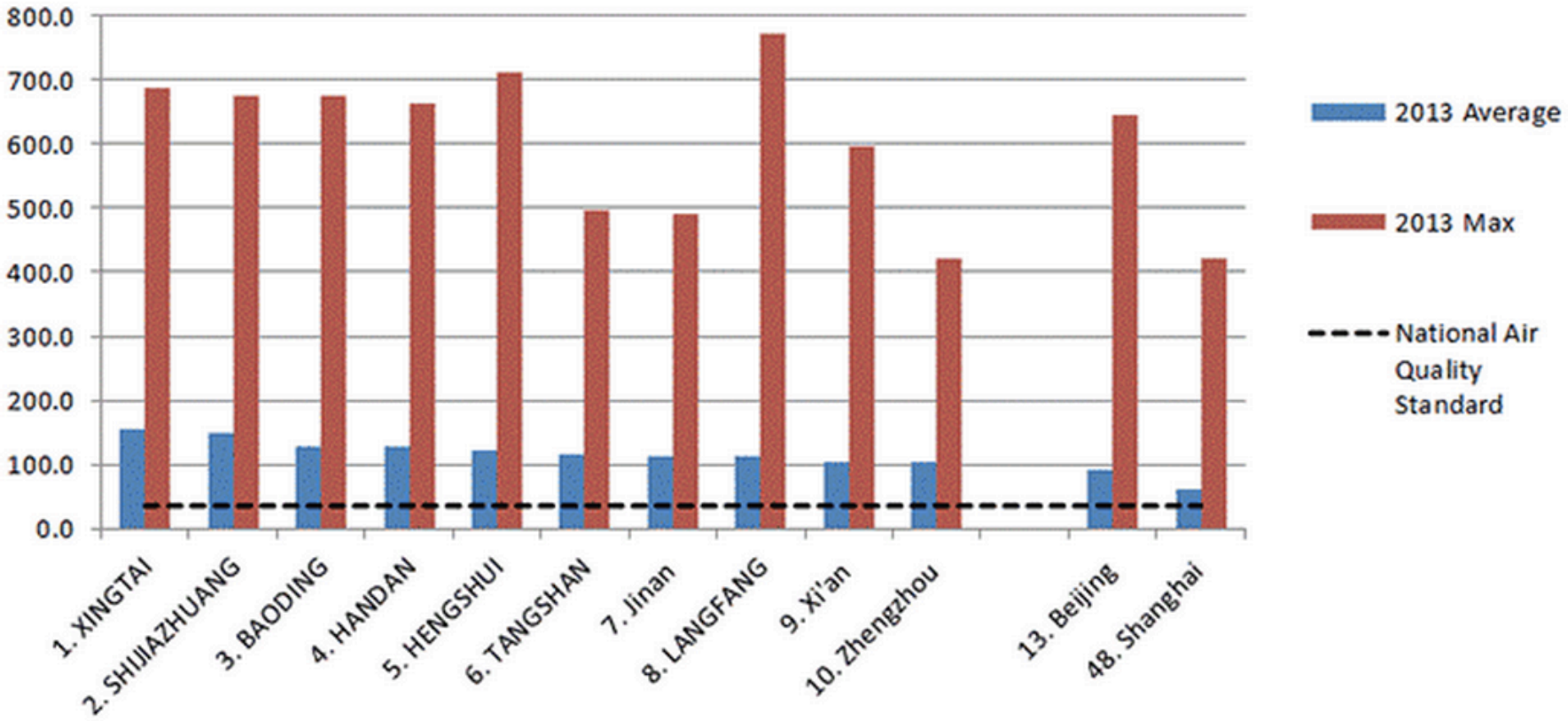
Originally published February 5, 1930

TOP 10 POLLUTED CITIES IN 2013



Source: MEP

From Greenpeace Beijing

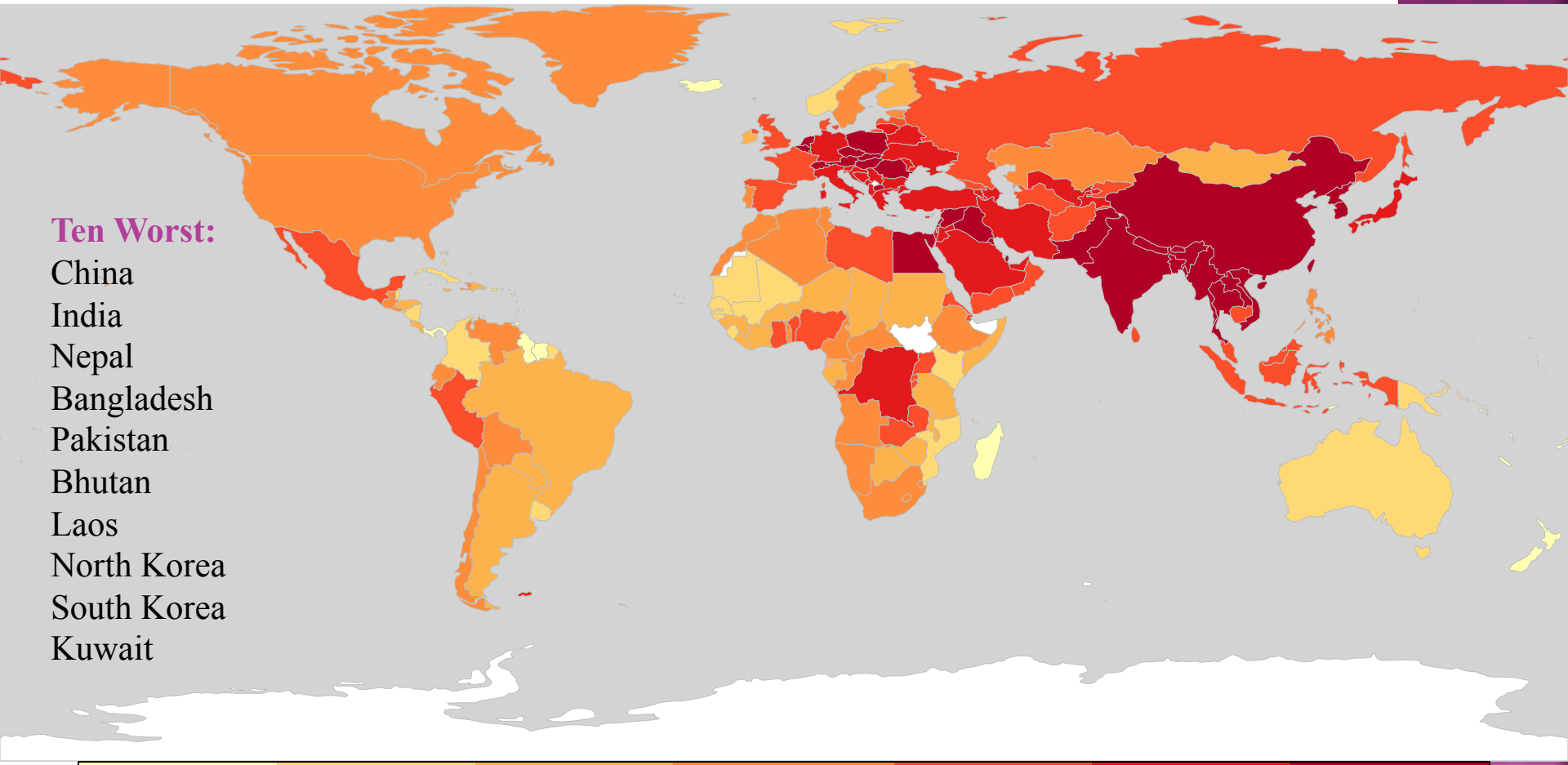
LOS ANGELES, 1953 AND 2005

Source: New York Times, August 3, 2005, “Los Angeles is Cleaner, but Troubles Remain”

THE POINT:

- There is nothing that can't be solved by policy over time.
- US pollution controls began in the most-polluted cities in the mid-1950s.
- We started to see results in the 1970s.
- Over half the improvements in sulfur emission in the US happened after the Clean Air Act of 1990 (more than 35 years after efforts began).

GLOBAL PM2.5 EXPOSURE



Hsu et al. (2014)

Environmental Performance Index

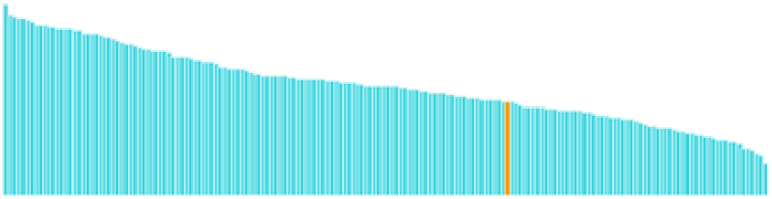
COUNTRY PROFILE

China

EAST ASIA AND THE PACIFIC

118

OVERALL RANK
OUT OF 178



43

OVERALL SCORE
OUT OF 100

+2.6%

10 YEAR TREND
OUT OF ±45.88%

$5,680	1,350.69	9,365,945
GDP/CAPITA	MILLION PEOPLE	SQUARE KM

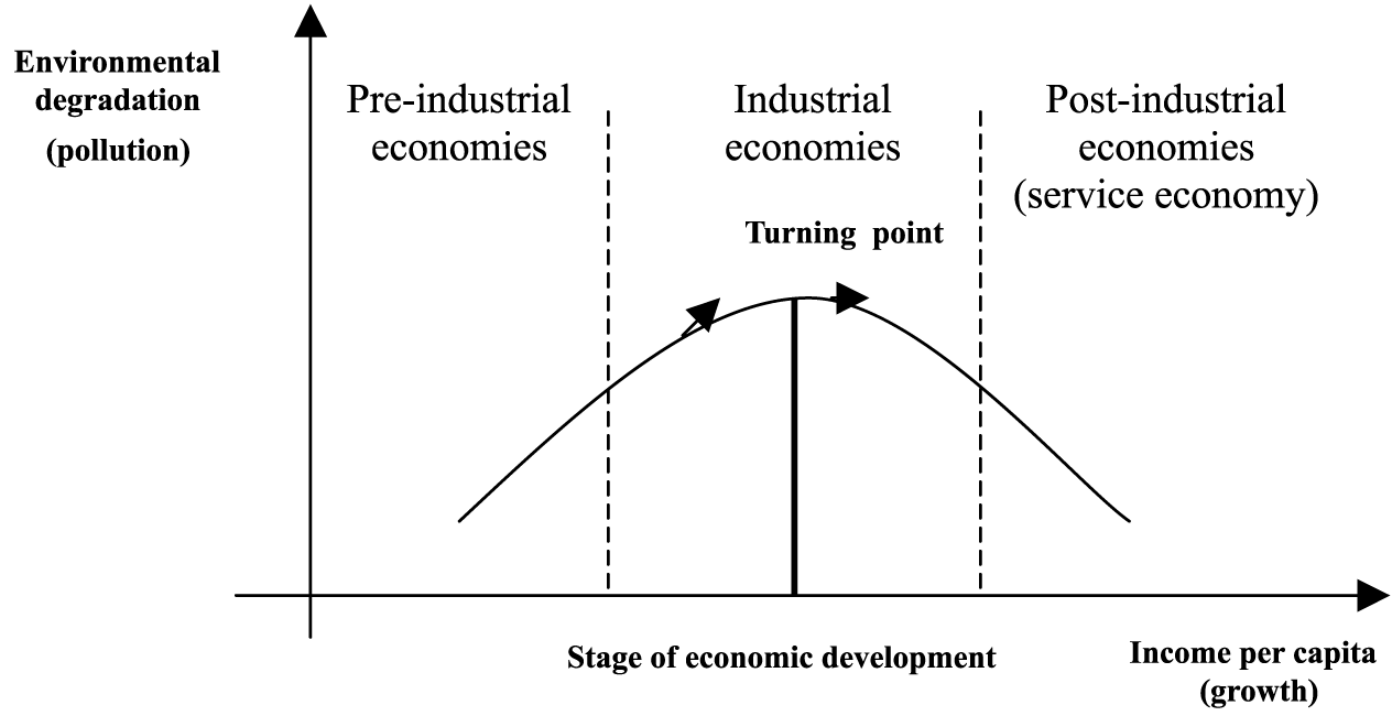
ISSUE SCORE
FOR 9 CORE ISSUES

NAME OF INDICATOR	SCORE	RANK	10 YEAR CHANGE
Overall Score	43	118	2.6%
Health Impacts	76.23	80	3.22%
Air Quality	18.81	176	-14.15%
Water and Sanitation	33.15	109	59.07%
Water Resources	18.18	67	
Agriculture	33.85	166	-22.31%
Forests	25.34	80	
Fisheries	14.68	89	-20%
Biodiversity and Habitat	66.63	76	0.66%
Climate and Energy	65.16	21	

For more information, visit **http://epi.yale.edu.**

HOW WOULD WE DESCRIBE TRADITIONAL ATTITUDES?

Growth at all costs or 天人合一?



Source: Panayotou (1993)

WHAT ARE THE MAIN ENERGY AND ENVIRONMENTAL POLICIES?

- Where do we find them?
  - National Policy 国策
  - Five-Year Plan
- Energy
  - Energy Efficiency Targets
  - CO2 Targets
  - Production Targets
- Pollution
  - Air
    - National Standards
    - Regional Air Quality Management Plans
  - Water
  - Soil
- Green Technology/Industries

POLITICS AND POLICY

- National interests and policy
  - Schreifels, et al
- Local business and political interests
  - Lorentzen, et al
- Interest Alignment
  - Kostka and Hobbs
- The drive for improvements is top down
  - Lorentzen notes bottom up approaches have not worked
  - Yet transparency is important, why?
  - What does an authoritarian government need?

WHO'S IN CHARGE?

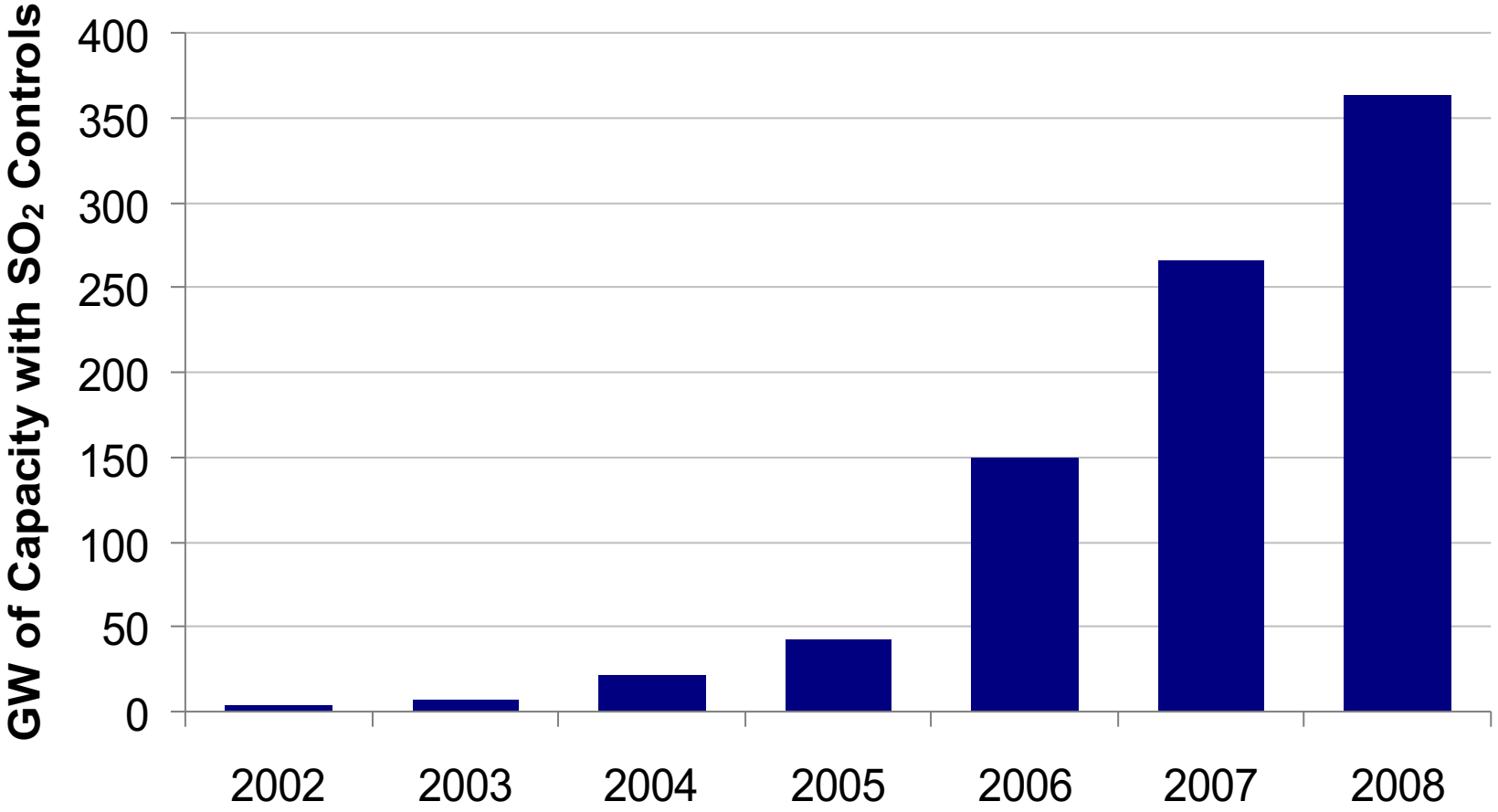
- No Party Leadership Small Groups
- Leadership Small Groups are State Council/Ministers
- Red/Expert – technical ministries in this area always expert
- Lieberthal's Matrix Muddle – multiple lines of control

LESSONS FROM SULFUR CONTROL

Table 3
Key elements of the 10th and 11th five-year plans.

Element	10th Five-year plan (2001–2005)	11th Five-year plan (2006–2010)
Goal instrument	The National 10th Five-year Plan for Environmental Protection—an aspirational goal	The Outline of the National 11th Five-year Plan on Economic and Social Development—a mandatory, binding goal
Political support	Leadership succession delayed environmental strategy	Statements of support from high-level political leaders (Premier Wen) MEP-NDRC and cross-agency regulations and standards
Accountability	Lack of evaluation metrics	Defined evaluation metrics and consequences
Emission verification	Limited local efforts	CEMS mandate MEP auditing and data verification program Satellite-based quality assurance
Administrative focus	TEC covered five pollutants and solid waste	TEC covered SO_2 and chemical oxygen demand
Policy revisions	• Pollution levy 0.63 RMB/kg SO_2 collected by local EPBs • Green pricing premium 0.015 RMB/kW h for installing FGD • SO_2 concentration limit 400–1200 mg/m^3 • Suspension of power plant construction moratorium due to electricity shortages	• Pollution levy 1.26 RMB/kg SO_2 collected by Ministry of Finance • Green pricing premium 0.015 RMB/kW h for satisfactory operation of FGD with penalties of 0.015RMB/kW h for 80–90% operation and 0.075 RMB/kW h for $<80\%$ operation • SO_2 concentration limit 400–1200 mg/m^3 • Lower prices for electricity from small power plants • Closure of 77 GW of small, inefficient power plants

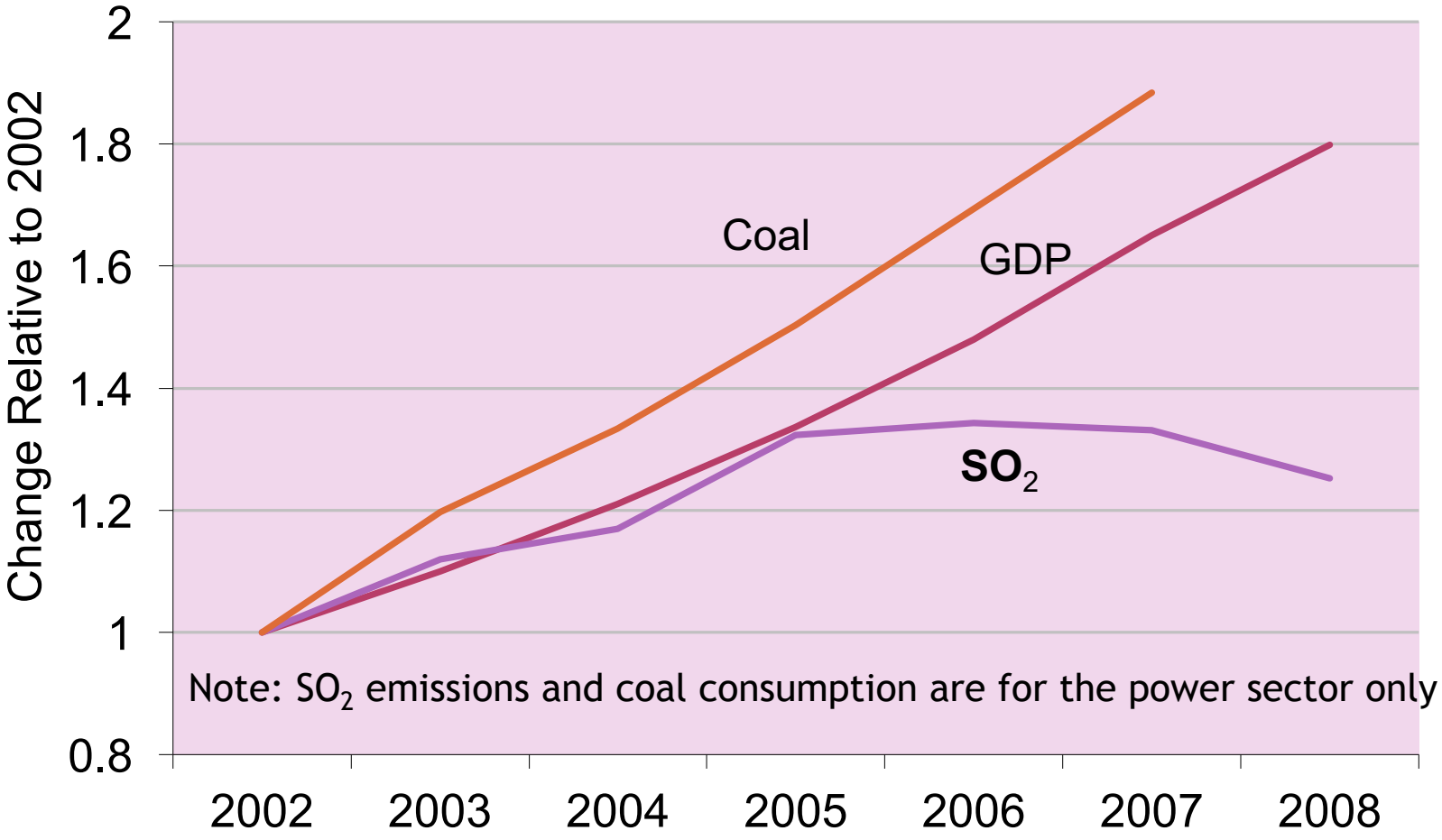
POWER PLANT'S HAVE INSTALLED SO_2 CONTROLS



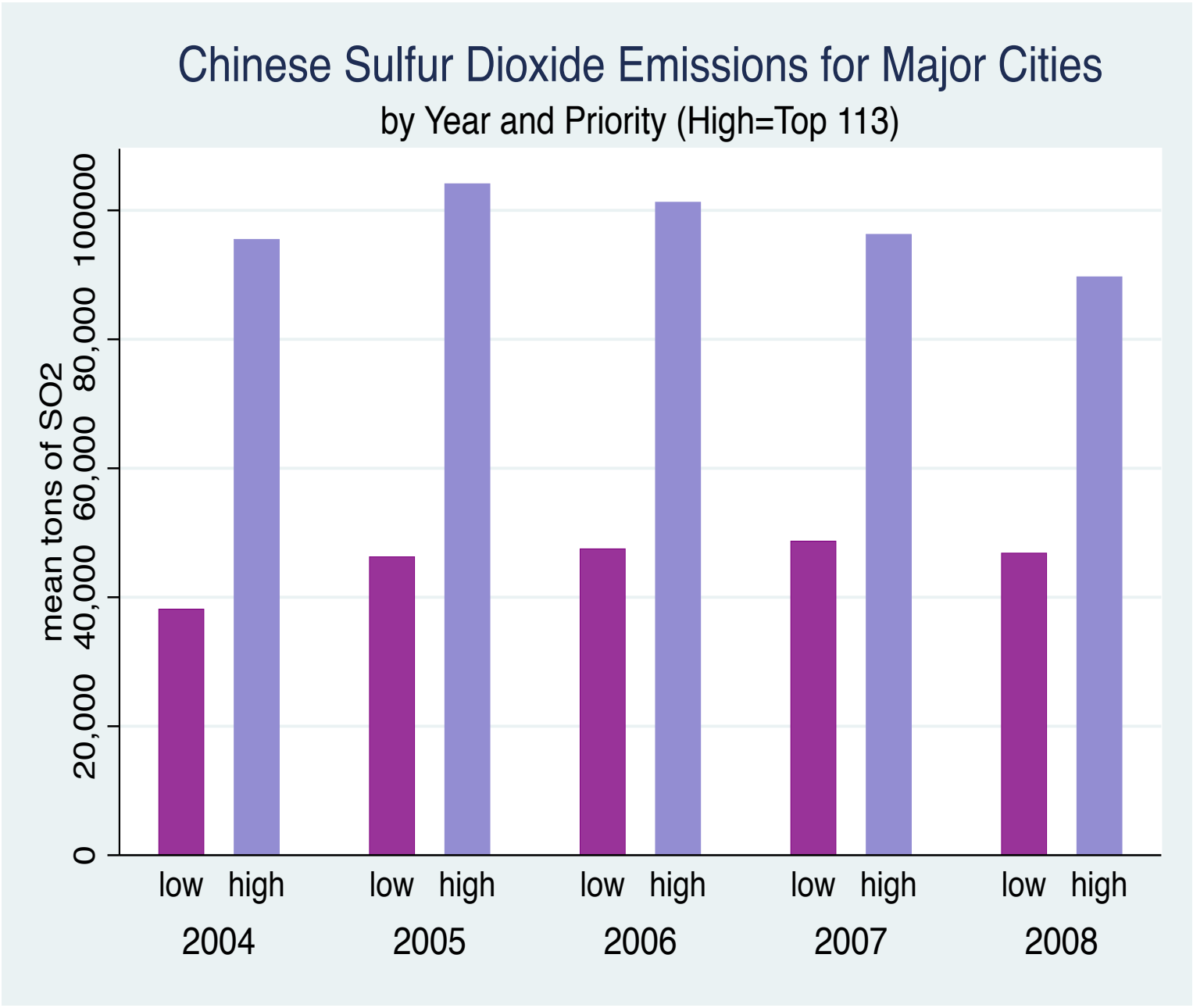
Source: Chinese Ministry of Environmental Protection

Remember: CEMS Installation Begins in 2007

THE 11TH FIVE YEAR PLAN TURNED THE CORNER ON SO_2



Source: Chinese Ministry of Environmental Protection


Chinese Sulfur Dioxide Emissions for Major Cities
by Year and Priority (High=Top 113)
mean tons of SO2
0
20,000
40,000
60,000
80,000
100000
low
high
2004
2005
2006
2007
2008

LESSONS FROM THE ENERGY EFFICIENCY EFFORTS

- Two major policies in Kostka and Hobbs
  - 1000 Enterprise Program
    - For more on theresults of this program see Price et al in Energy Policy, Volume 38: Issue 8. August 2010
  - Small Plant Closures
- First key innovation was focusing on the largest and the smallest
- Major advantage were win-win solutions – what Kostka and Hobbs describe as policy bundling

THE THOUSAND ENTERPRISE PROGRAM NATIONALLY

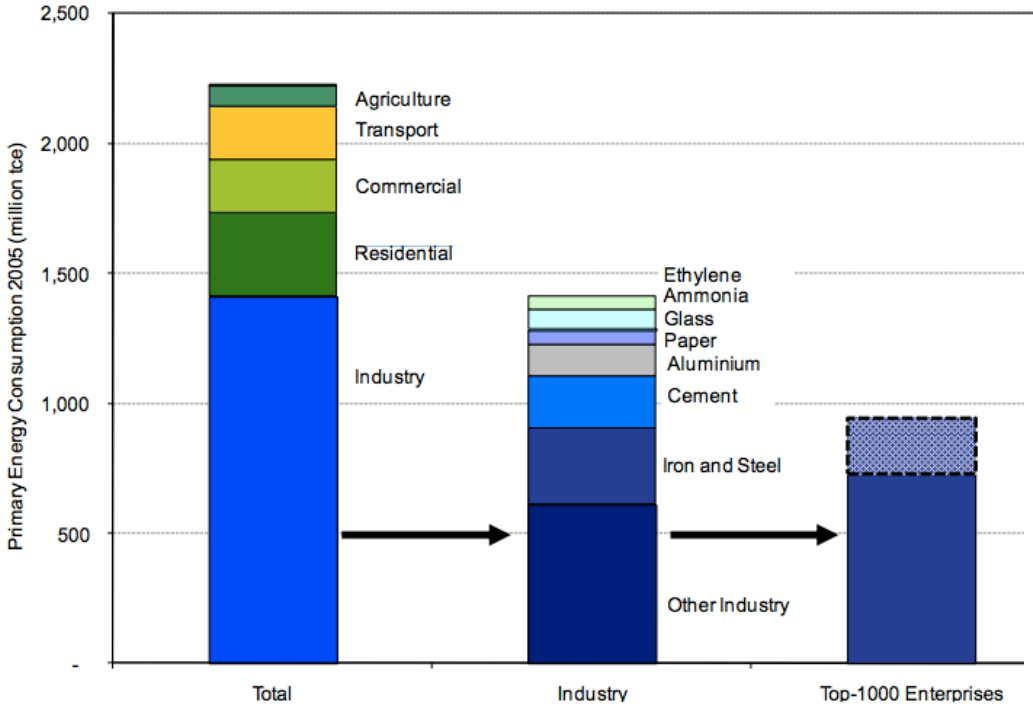
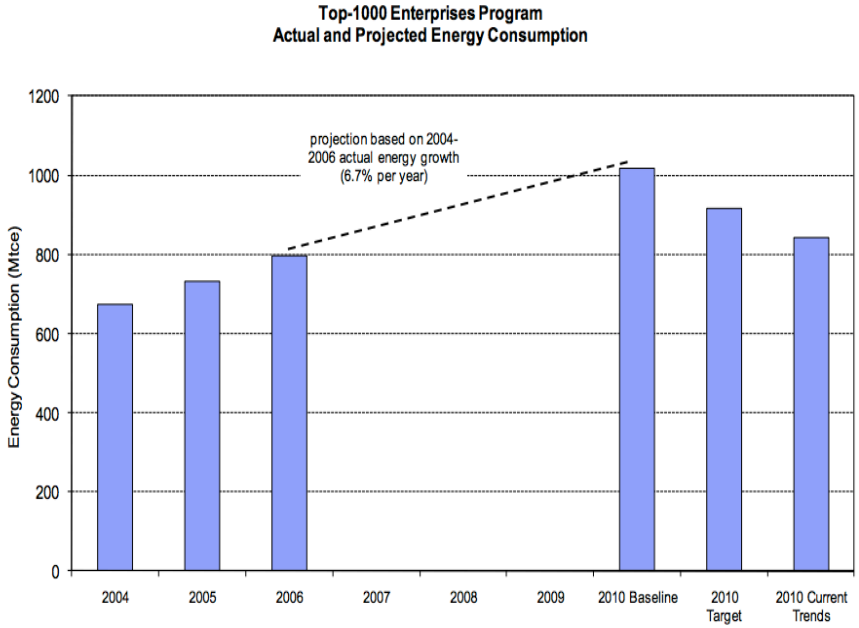


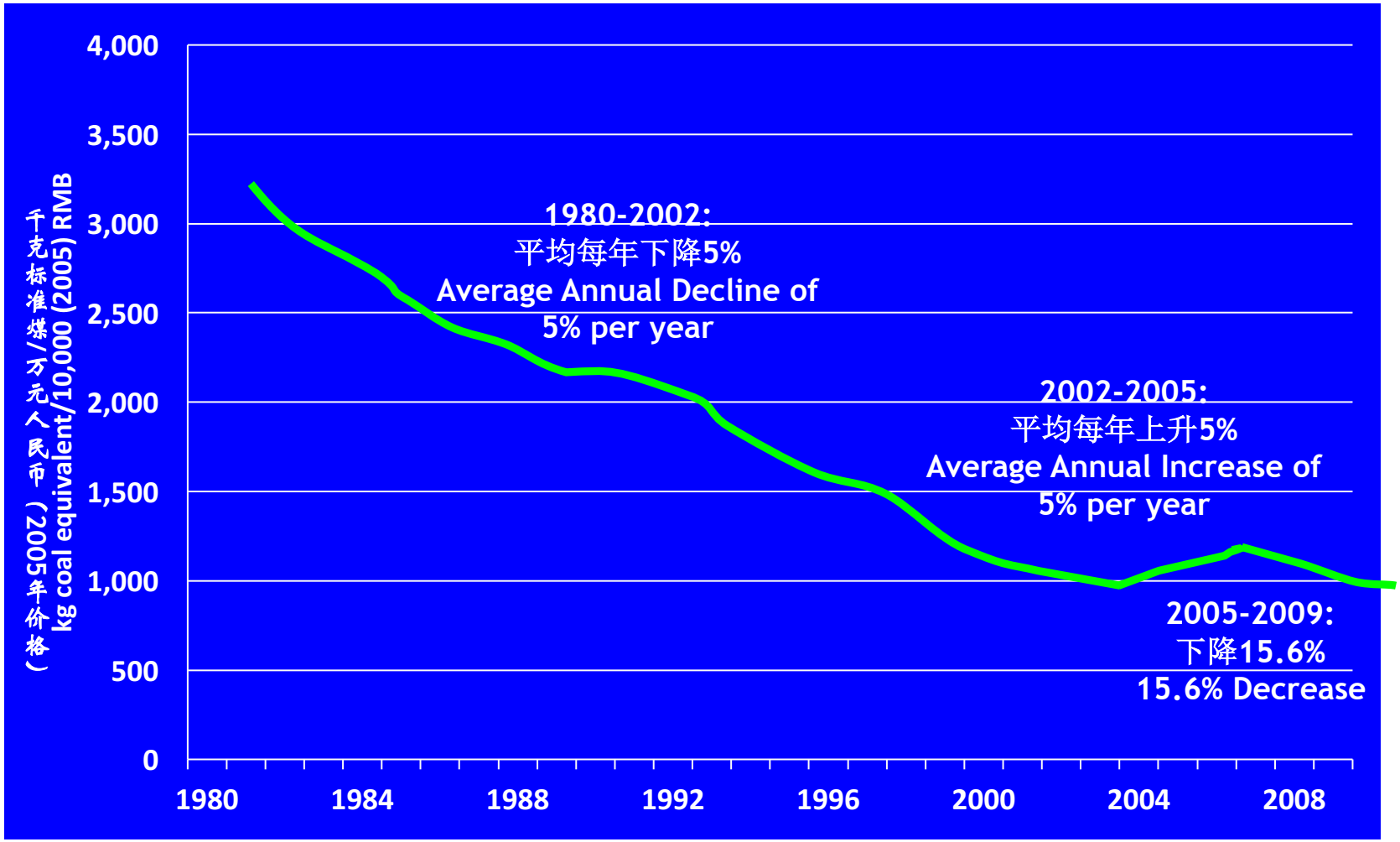
Figure 2. Energy Consumption of China, China's Industrial Sector, and the Top-1000 Energy-Consuming Enterprises, 2005



Source: Price, et al, 2010

In the 12th Five Year Plan, this becomes the 10,000 Enterprise Program

CHINA'S ENERGY INTENSITY (1980-2009)



Source: Lawrence Berkeley National Lab

INFORMATION SYSTEMS

- Instructions from the Center
- Monitoring and Compliance Systems
- Inspection Teams
- Media
- The Internet - Weibo
- Public Participation
  - Hotlines
  - Public Hearings
- Direct Communication to the Public

ROLE OF NGOS

- Information
- Social Mobilization
- Rarely advocacy
- Feedback
- Pressure Valve
- Governance experimentation