



Progress of Vehicle Emission Control in China

Ni Hong

Ministry of Environmental Protection, CHINA

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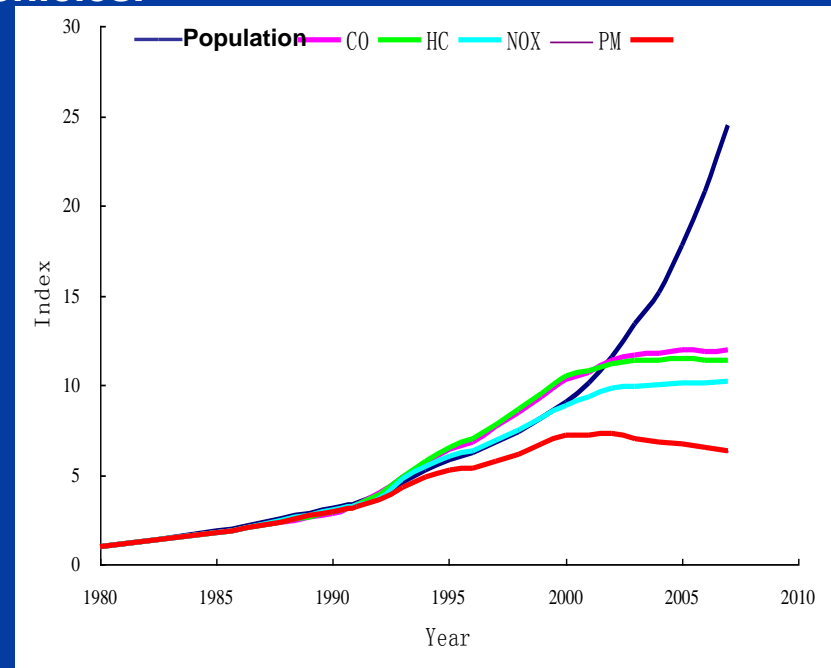
Vehicle Pollution in China

Population and Emission

- Till March 2010, the total population of vehicles was almost 192 million. Motorcycles and rural low-speed vehicles comprise about 58.1 and 9.7% of the fleet. Automobile comprise 32.2% of all vehicles.
- Since 1980, the number of vehicles in China has increased 24 times, while total emissions have only increased 12 times. Based on uncontrolled scenario, the total emissions will be 21 times.
- Chinese vehicle emission amounts

Unit: million tons

Year	PM	NOx	CO	THC
2007	0.59	5.50	39.47	4.78
2008	0.59	5.49	37.71	4.78



Note: Set 1980 data as index 1

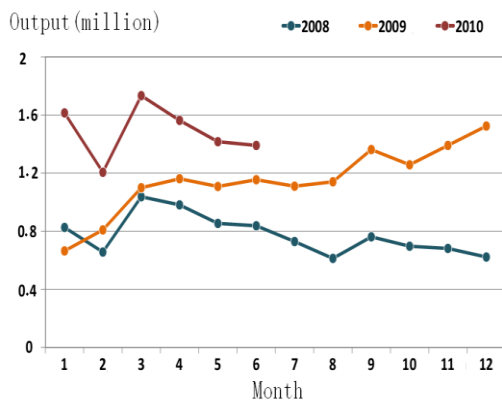


Vehicle Pollution in China

Big Impact to EST

- Amount of the auto output creases by more than 10% in recent years

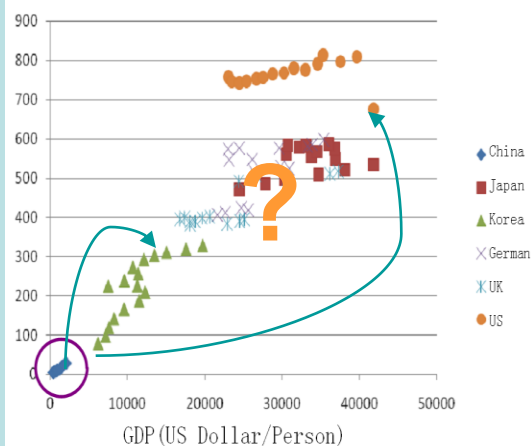
Automobile production in recent years



- Chinese people will have more automobiles

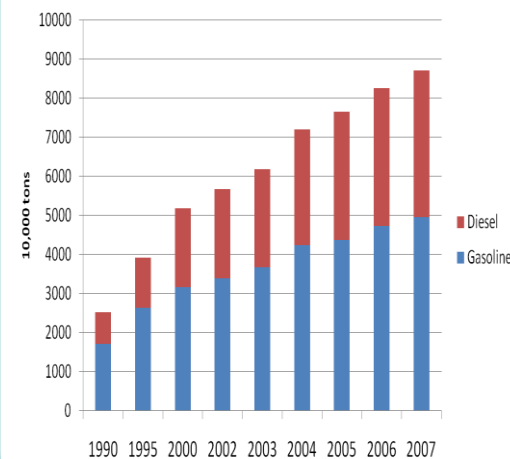
- In 2009
59/1000person
- No.80 in the world

Automobile Number per Thousand Person



- Fuel consumption increasing by 1-2 million tons per year!

Motor Gasoline and Diesel Consumption in China





Emission Control Strategies

Strict Standards

Emission and Noise Standards for New Vehicle

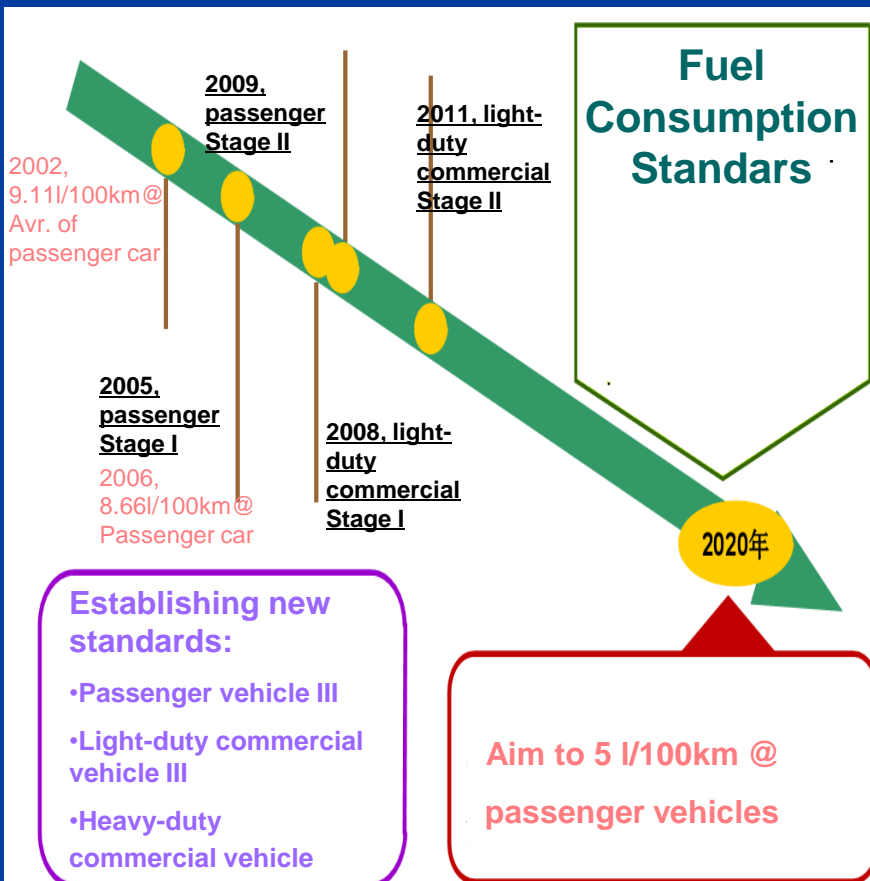
Category		Air Pollution			Noise
		Driving cycle	Evaporation	smoke	
Auto mobile	Light- duty	● 4	● (only for gasoline)	● (only for desiel)	● 2
	Heavy- duty	● 4	● (only for gasoline)	● (only for desiel)	● 2
Motorcycle	motorcycle	● 3	●	●	● 2
	moped	● 3	●	●	● 2
Three-wheels & low speed truck		● 2		●	● 1
Engine for non-road mobile machinery	CI	● 2		◎	○
	SSI	◎	○		○
	SI	○	○		○
Engine for boat inland	gasoline	◎		○	○
	diesel	○	○		○
Locomotive		○		○	○

● existing standards ◎ drafting ○ not built yet The number means the stage of the limits



Emission Control Strategies

Strict Standards



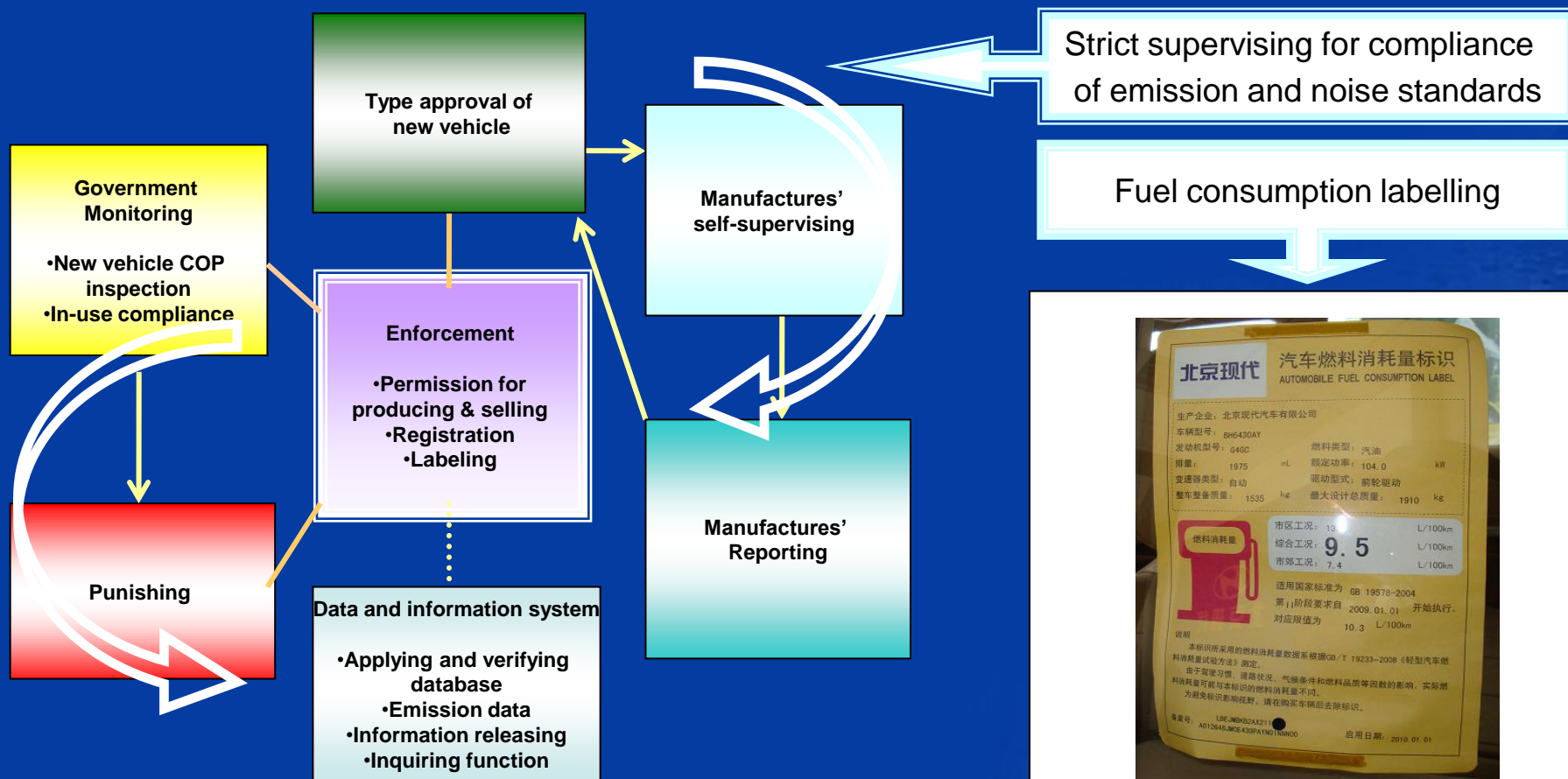
Fuel Quality Standards
---S content (ppm)

		Year			
		2008	2009	2010	2011
Diesel	China	2000/500			350
	Guangdong	350			
	Shanghai	2000/500			
	Beijing	50			
Gasoline	Beijing	50			
	Shanghai	500/150			
	Guangdong	150			
	China	500/150		150	



Emission Control Strategies

New Vehicle Requirements





Emission Control Strategies

In-Use Vehicle Requirements

- Environmental periodic inspections, chassis dynamometer is used, in 2009, 32.12million auto were tested;
- Strengthening road sampling tests, using remote sensing devices ;
- Increasing scrapping rate of high-emitting vehicles;
- Retrofit program;



- Built and initiated nationally-implemented environmental compliance labeling system- In 2009,13% of the auto were labeled;
- Vehicle driving restriction.



Emission Control Strategies

Fuels and Additives

Unleaded and Low Sulphur

- Leaded gasoline had been phased out in 2000;
- Beijing, Shanghai, Guangdong, and other areas have implemented standard of 50ppm sulfur motor vehicle fuel in advance.



Evaporation

- In some area, promoting lower year-round RVP to control atmospheric pollution and photochemical smog;
- Developed vapor recovery management and actively expanding implementation area.



Additives

- Built approval system for gasoline detergent additives;
- Issued list of additive amounts and density, and other inspection data;
- 11 manufacturer were registered.





Emission Control Strategies

Multiple Incentive Strategies

	<u>Small capacity Vehicles</u>	<u>Subsidy for peasantry buyers</u>	<u>Replacement</u>	<u>New energy vehicle Rebate</u>
Objects	Auto (capacity $\leq 1.6l$)	<ul style="list-style-type: none"> •Motor cycle •Car (capacity $\leq 1.3l$) •Light-duty truck (while scrap low-speed vehicle) •Three-wheel vehicles 	Replace the "yellow Labeled" auto by a new one	<ul style="list-style-type: none"> •Hybrid •Electromobile •Fuel-cell mobile
Benefits	Reducing 50% of the purchase tax	Lower tax allowance	Up to 6,000CNY allowance	<ul style="list-style-type: none"> •Light duty vehicle, up to : 50,000/60,000 /250,000 CNY •Bus, up to 420,000/500,000/600,000CNY
Results	In 2009 sold 7.2million, increased by 69.5% than in 2008	In 2009 5.83million motorcycle 1.67million auto	Jan.-Jun. 2010 174,000Auto, included 69,000cars	

To phasing out the high pollutant vehicles, and use more cleaner and energy conservatory vehicles



Summary



- The aim of MEP is to reduce the pollution from mobile source to approach the EST goal;
- Vehicle emission is initially controlled in China, but we are still facing big challenges;
- For controlling emissions, we must consider vehicles and fuels as a system. Motor vehicle fuel desulfurization, plus implementing clean and low carbon fuels are important directions for continuous and vigorous work;
- Pay more attention on improving transportation ambient air quality and decreasing human exposure while reducing total motor vehicle emission amount.