



Vehicle Emission Control in China

N i H o n g

Ministry of Environmental Protection, CHINA

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Contents

- Vehicle Pollution in China
- Vehicle Emission Control in China
- Trends of Vehicle Emission Control
 - Summary

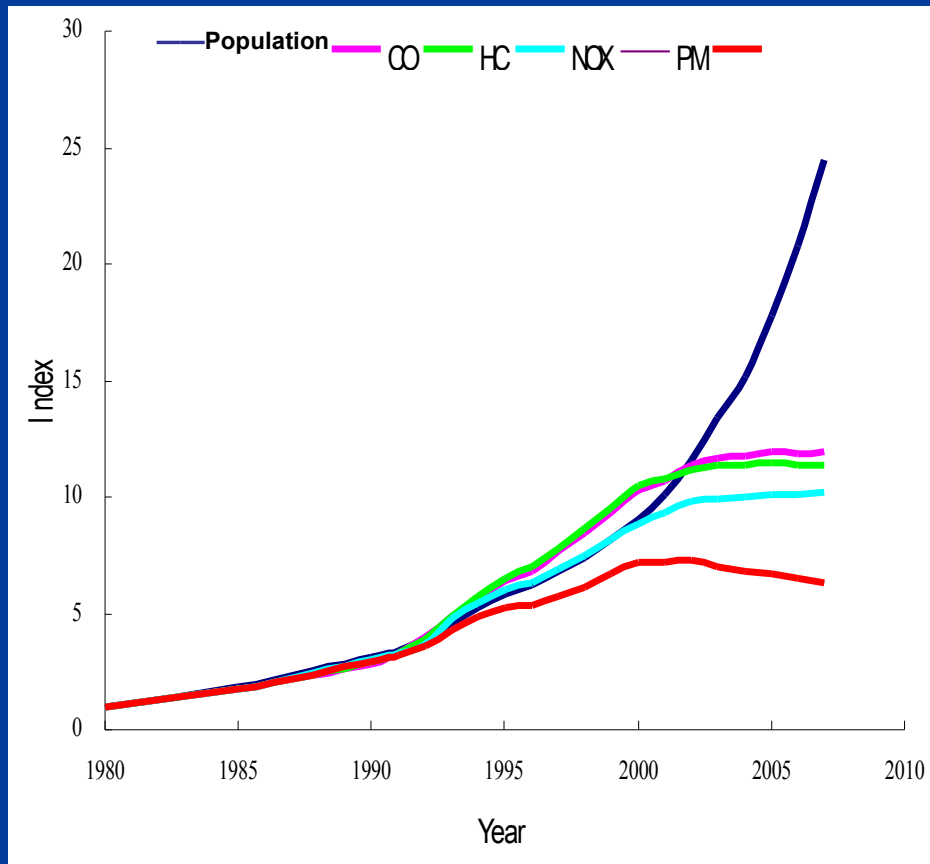


Vehicle Pollution in China





Population and Emission

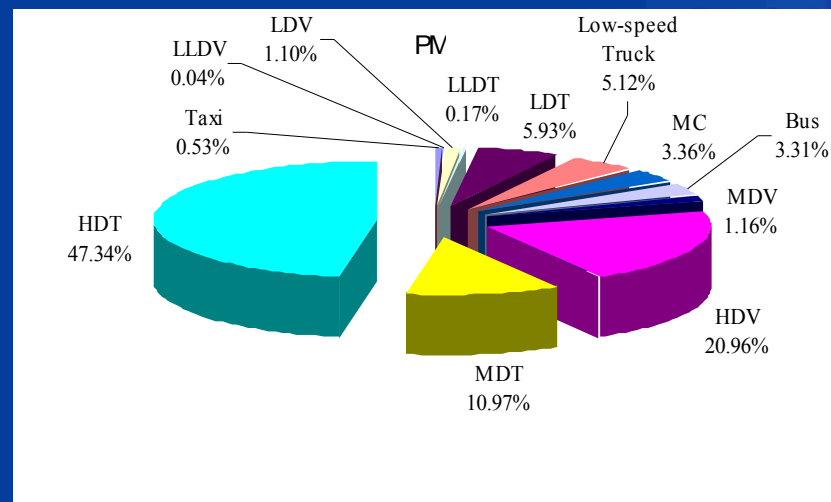
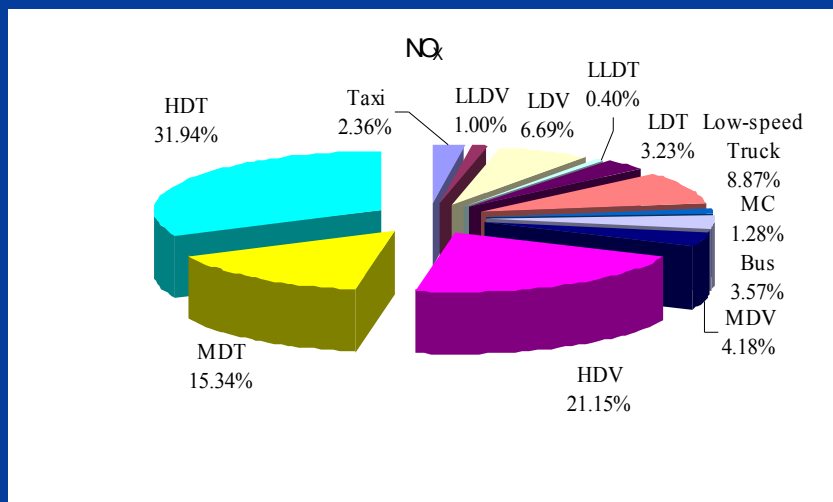
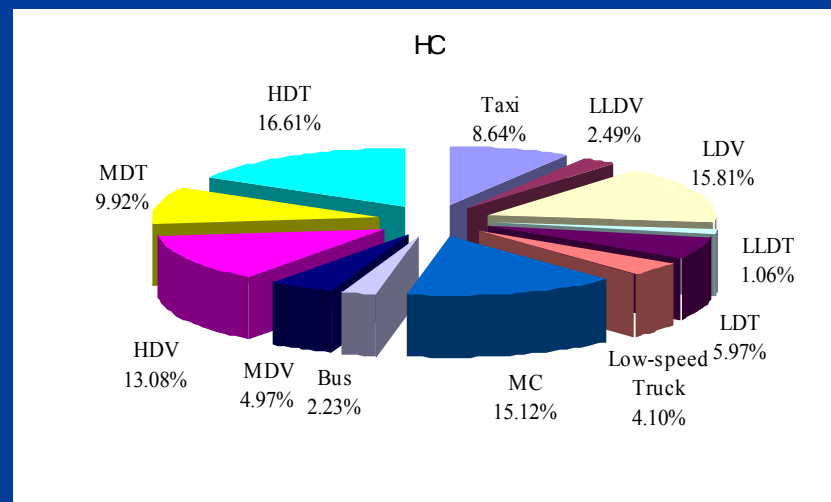
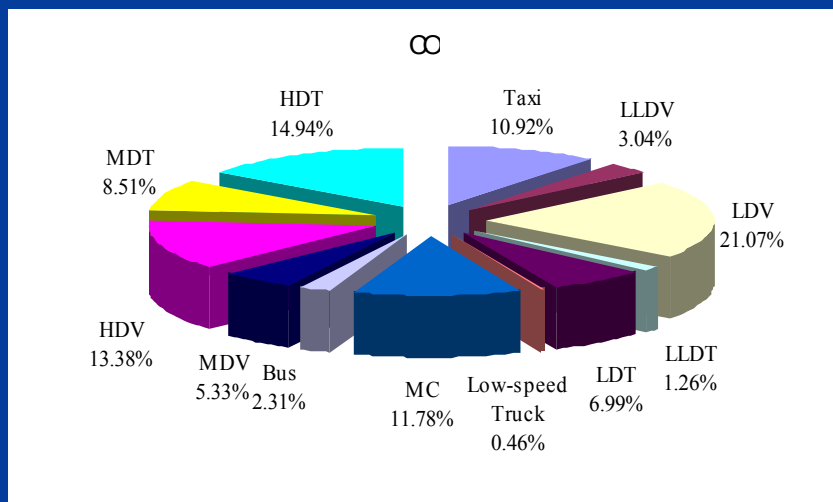


Note : Set 1980 data as index 1

- After 2000, following the introduction of stricter and stricter emission standards, the total emissions from vehicles have been effectively controlled. The rapid trend of increasing vehicle population has not been accompanied by a corresponding increase in vehicle emissions.
- 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.



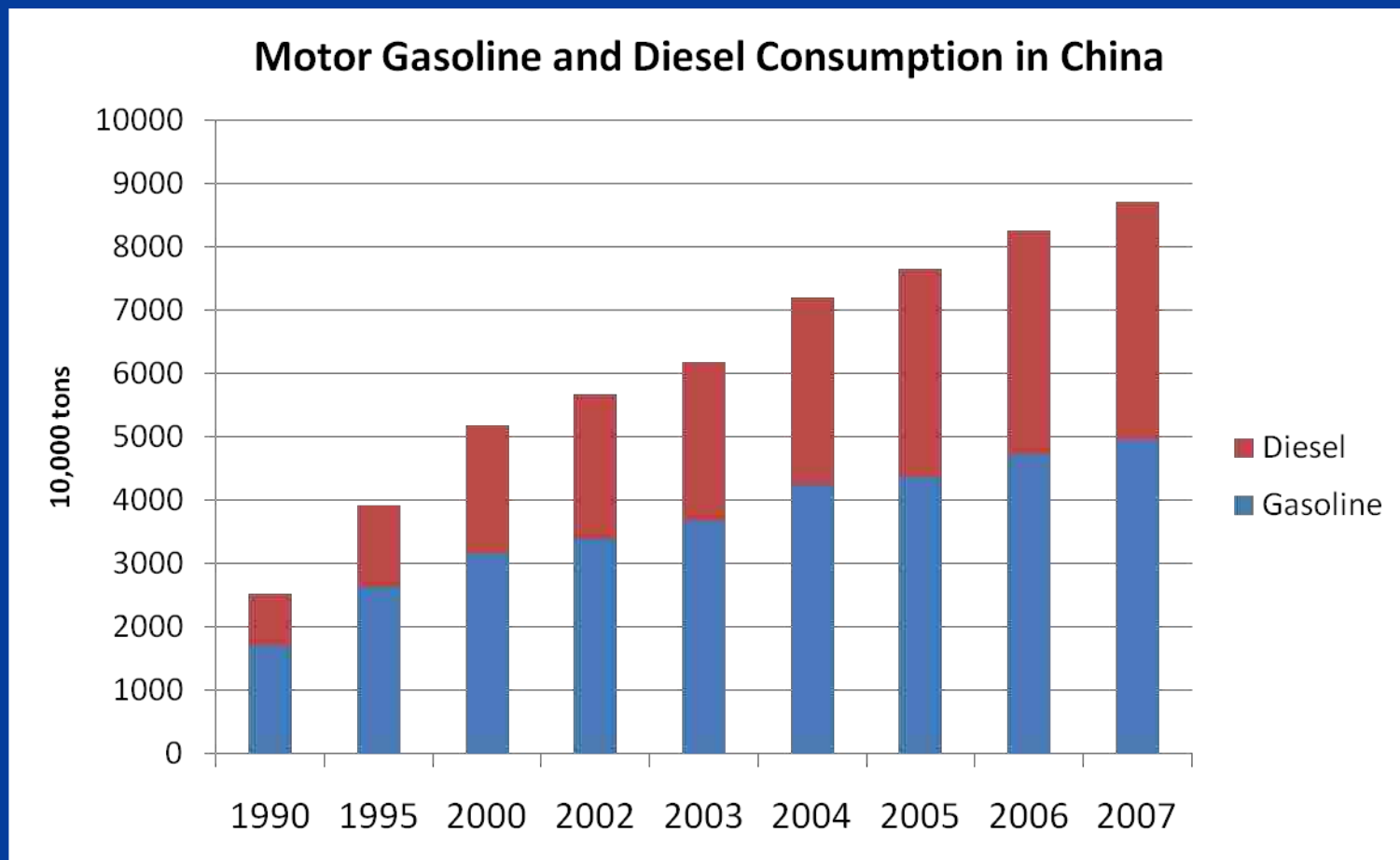
Emission Contributions (2007)





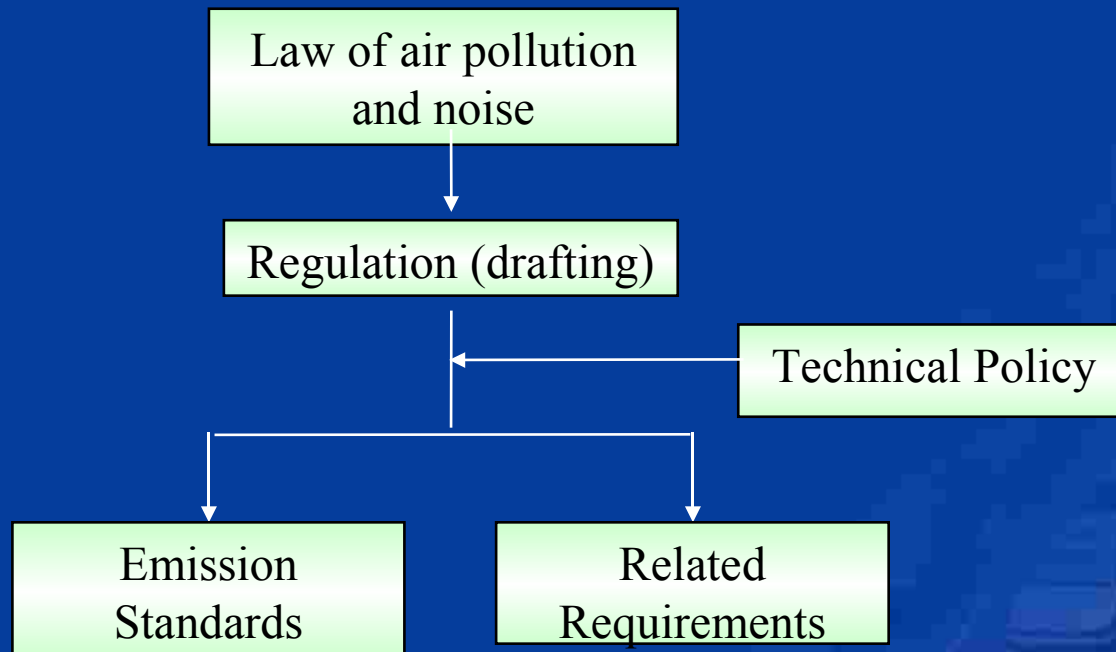
Vehicle fuel consumption

- Increasing by 1-2 million tons per year!





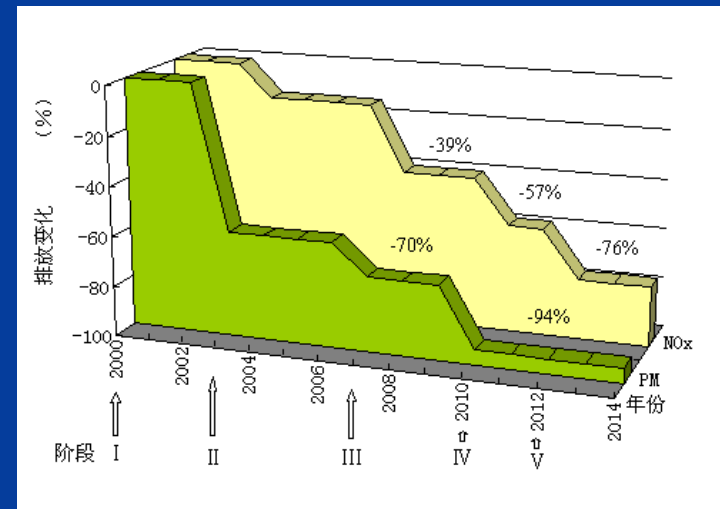
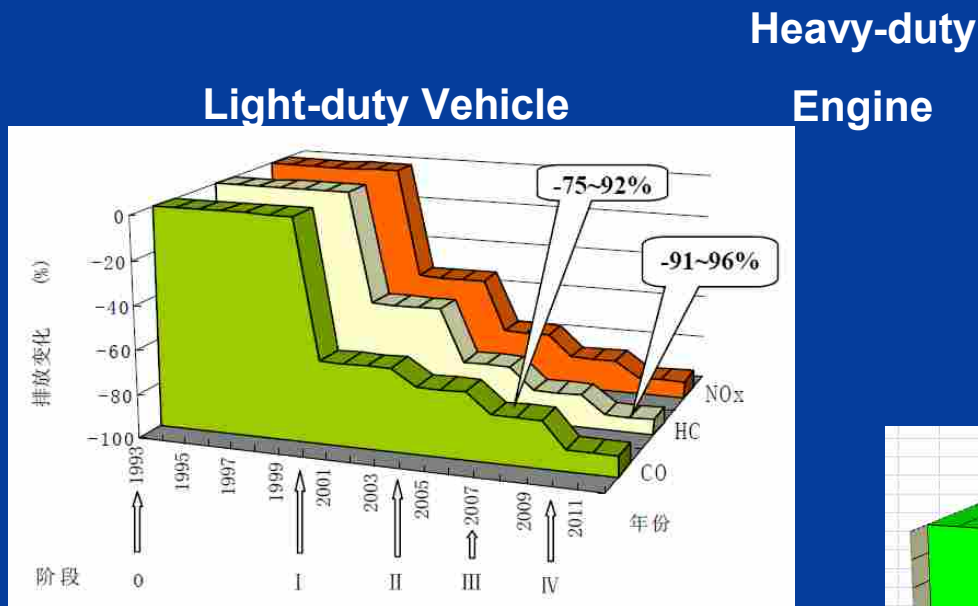
Vehicle Emission Control in China



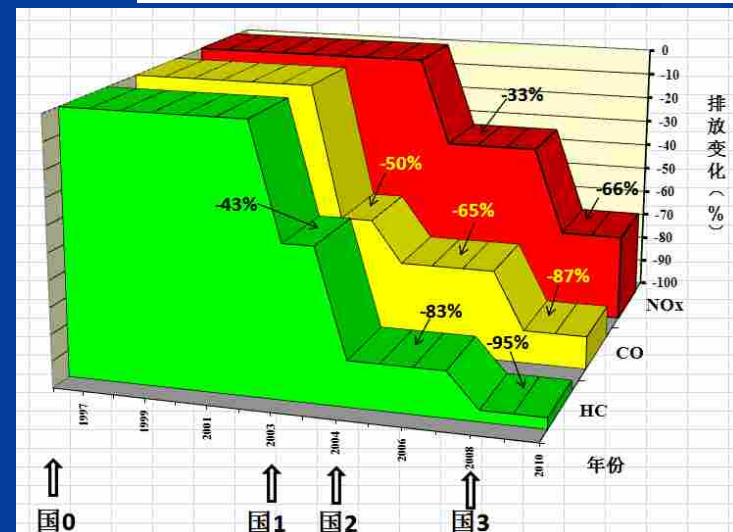


Emission Standards

- Strict Emission Limits



Motor Cycle





Emission Standards

- Developing Standard Framework

On-road Vehicles

Category		Items	Air Pollution					Noise	
			Driving cycle	Evaporation	Crankcase	Idle Test	Full-load opac.		Free-acce. opac.
Auto mobile	Light-duty	gasoline	●	●	●	●			●
		LPG&NG	●		●	●			●
		diesel	●				●	●	●
	Heavy-duty	gasoline	●	●	●	●			●
		LPG&NG	●		●	●			●
		diesel	●				●	●	●
Motorcycle	motorcycle		●	●	●	●		●	●
	moped		●	●	●	●		●	●
Three-wheels and low speed truck			●				○	●	●

● existing standards ○ not built yet



Emission Standards

- Developing Standard Framework

Non-road Engines

Category \ Items		Air Pollution					Noise	
		Driving cycle	Evaporation	Crankcase	Idle Test	Full-load opac.		Free-acce. opac.
Engine for non-road mobile machinery	CI	●				⊙	⊙	○
	SSI	⊙	○	○				○
	SI	○	○	○	○			○
Engine for boat inland	gasoline	⊙				○		○
	diesel	○	○	○				○
Locomotive		○				○		○

● existing standards ⊙ drafting ○ not built yet



Emission Standards

- Future emission standards (2010)
 - Small general gasoline machinery (phase I and II) ;
 - Light duty vehicle (phase V) ;
 - Motorcycle and moped (phase IV) (including WMTC) ;
 - 3 wheelers and low-speed truck (phase II);
 - SI engine for non-road machinery (phase I and II) ;
 - Diesel engine for vessel (phase I and II) ;
 - locomotive (phase I and II) .



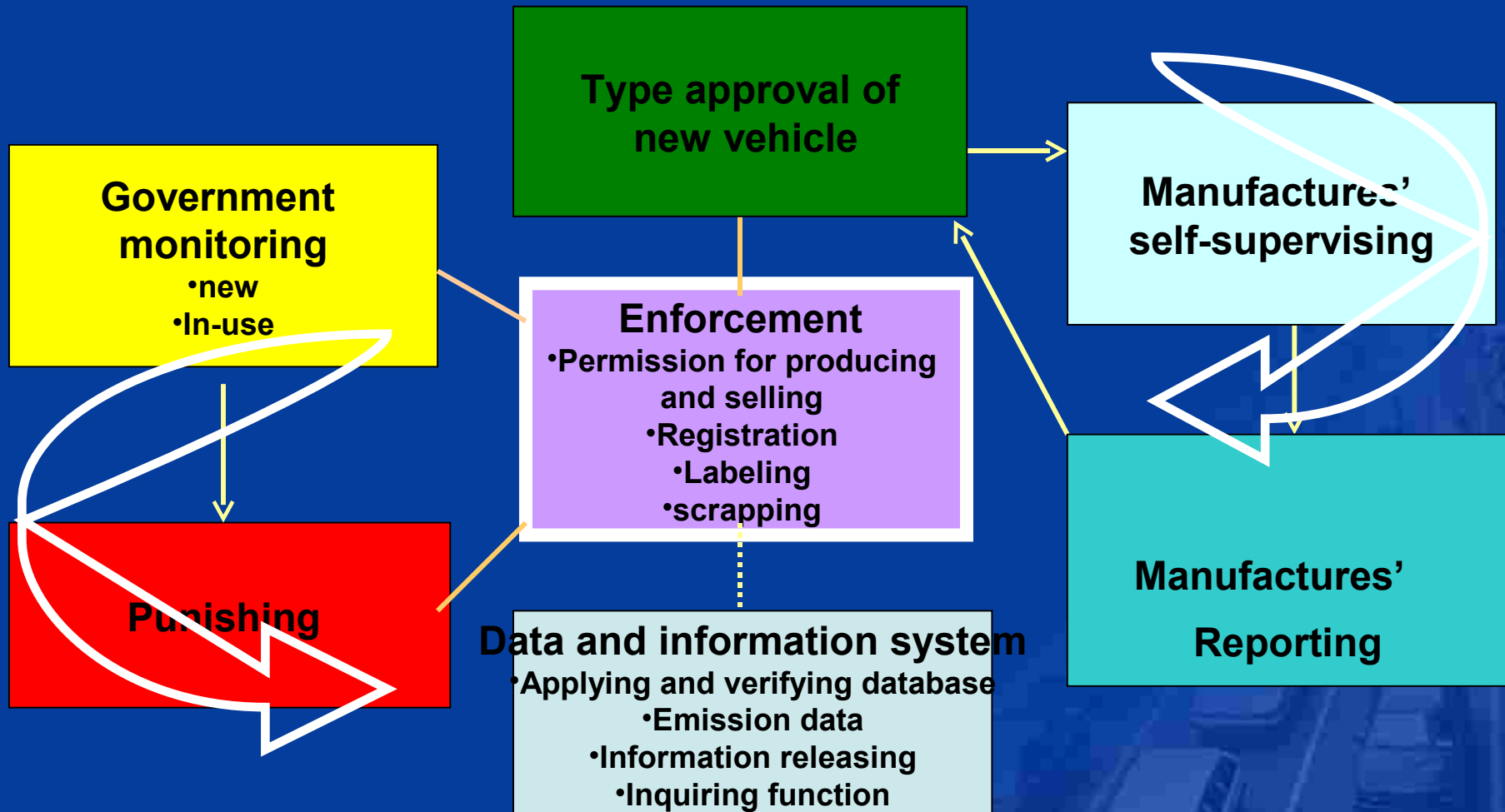
Laws and Regulations

1. Revising “Law of air pollution control” ;
3. Drafting The regulation about vehicle emission control ;
5. To improve the Environment protection requirements ;
labeling, test lab, fuel and additives...
7. Related policies are issued.
economic stimuli for phasing out the high emission vehicle, tax reducing for small capacity car, new energy vehicle, scrapping the vehicles out of limits, vehicle industrial policy, etc.



Requirements

Basic framework of vehicle emission control





Requirements

Responsibilities to be shared

Developing

Producing

In use

producer

- To insure following issues: emission performance, durability, ability for conformity of production and in-use compliance
- Applying for type approval Declaration
- Technical information

- Establish and operate the quality assurance system
 - § Self check the items based on type approval information
 - § Emission monitoring for productions
- Labeling
- Production improving
- reporting

- Quality guarantee and after market service
- Emission monitoring for productions
- Voluntary recall
 - improvement
 - remediation
- Reporting
 - § defect devices

Government

- Technical preview
- Type approval
- Information

- COP
 - § check the items based on type approval info.
 - § Emission testing
- change of type
- Analyze the reports
- Information

- In-use compliance supervising
- Reports analyzing
- Mandatory recall
- Emission testing for in-use vehicles
- Environmental compliance labeling
- Scrape the high emission vehicles

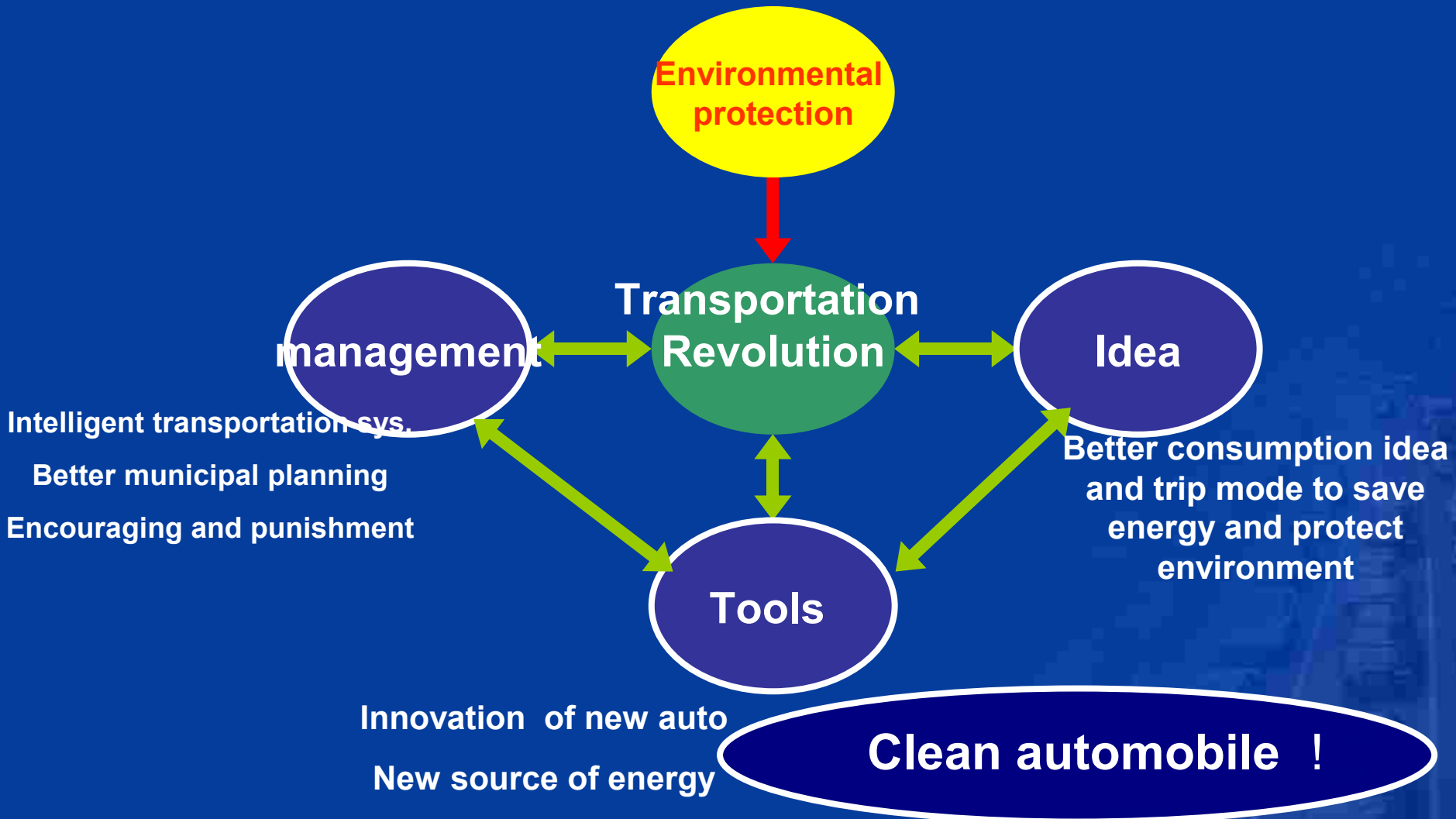


Trends of Vehicle Emission Control





The way to reduce pollutants





Why Clean Auto?

- To protect environment
 - Till 2009, population of automobile reached 76,193,100 , and raises rapidly every year , emission from auto is becoming the main pollutant source in cities ;
 - The government had made the goal of reducing 20% of energy consumption per GDP unit (is equivalent to 1.5 billion of CO₂) during the “11th 5 year plan” period.
- For energy supplying optimizing
 - To abate the dependence on oil ;
 - To modify the grid load.
- Need of promoting Chinese auto industry



Current situation

•Research and development

- Governmental projects: automobile industrial adjusting and revitalizing planning(2009), national program for energy conservation and pollutants reducing(2007), Chinese middle and long term planning of science and technology, national program for replying the climate change(2007), national 863 project and 973 project ... ;
- Status: evolved the development ability vehicle ; charged key technology of battery and electric motor.

•Industrialization

- Small-scale manufacture ;
- Demonstrate:“1000 for 10 cities” (2009 -2012) , government procurement, demo program for new energy automobile and energy conservatory vehicle (2009) ...

•Establish of regulations and standards

- Initialed the technical standard system (standard for pure electric vehicle...) ;
- Built testing and evaluation system ;
- Issued requirements (license for producing , July, 2009) .



Next step of MEP

- To support and encourage developing “clean vehicles”
- Concerning the environmental impact of new energy vehicle
 - Research on environmental impact of alternative fuel
- To establish the incentive measures based on environmental benefits
 - Phase in ;
 - Local policy ;
 - Various measures .
- To publish related regulations and standards
 - Vehicle emission control planning ;
 - Emission standard for hybrid vehicles ;
 - ...



Summary

- Vehicle emission is initially controlled in China , but we are still facing big environmental impacts.
- The emission control system is established and developing.
- We are pushing the clean vehicle's advance.



Thank you for listening !

