

Situation and Mission of Air Pollution Prevention and Control in China

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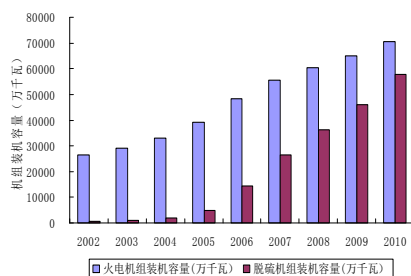
- **一、 Atmosphere environment situation**
- **二、 General thought of air pollution prevention and control**
- **三、 Air pollution prevention and control action plan**
- **四、 Working progress**

I. Atmosphere environment situation

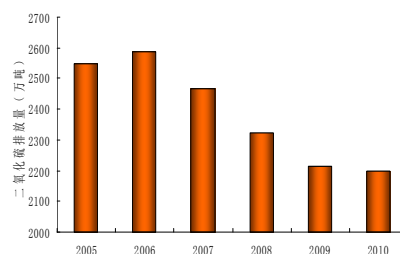
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Working progress since the 11th FYP

- Make SO₂ and NO_x emission reduction as constraint index
- Establish atmosphere regulations and revise air quality standards
- By 2013, national SO₂ emission reduced more than 20% over 2005, NO_x emission showed decline turning point for the first time



By 2012, thermal power unit desulfurization ratio increased from 14% in 2005 to over 90%



SO₂ emission trends during the 11th FYP

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Atmosphere environmental situation is still serious

1、 Enormous air pollution emission

In 2013, SO₂ and NO_x emission in China reached 20.439 million and 22.273 million tons respectively, far over the burden capacity of natural environment.

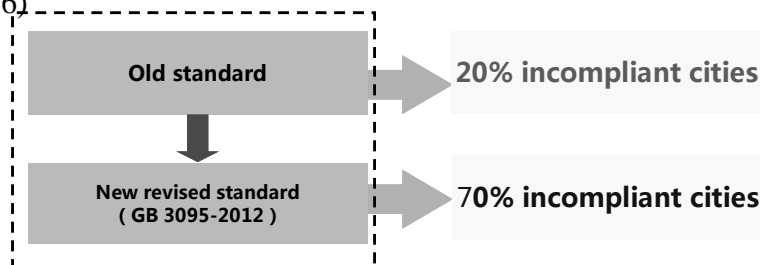


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Atmosphere environmental situation is still serious

2、 serious air environmental pollution

Now, about 70% cities in China are incompliant under the new atmospheric environmental quality standard (will be enforced from 2016)

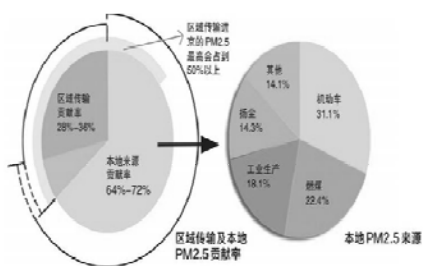


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Atmosphere environmental situation is still serious

3、Motor vehicle pollution is becoming outstanding

- Motor vehicle exhaust has become one of the main sources of urban air pollution
- ✓ Highly related to air pollution problems like haze, acid rain and photochemical smog



PM_{2.5} sources of Beijing

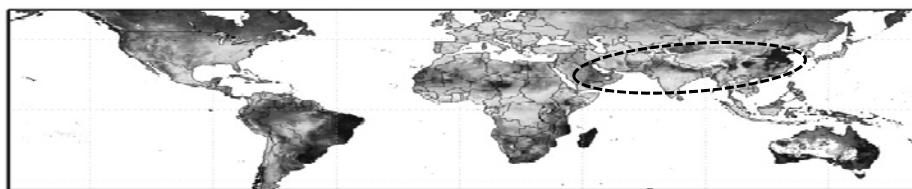


Motor vehicle is the No.1 source of local PM_{2.5} in Beijing

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Atmosphere environmental situation is still serious

4、Regional air pollution problem—PM_{2.5}



Annual PM_{2.5} concentration

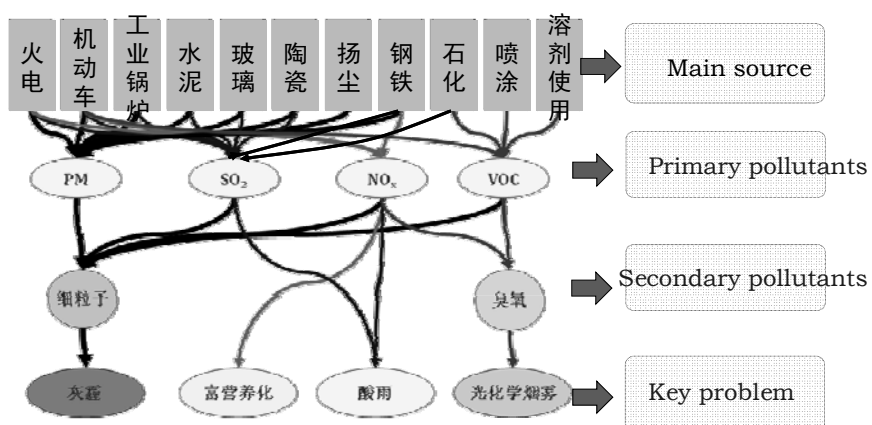
Over 70ug/m³ in Beijing-Tianjin-Hebei area and Yangtze River Delta area, twice as national standard, most polluted areas of PM_{2.5} in the world.

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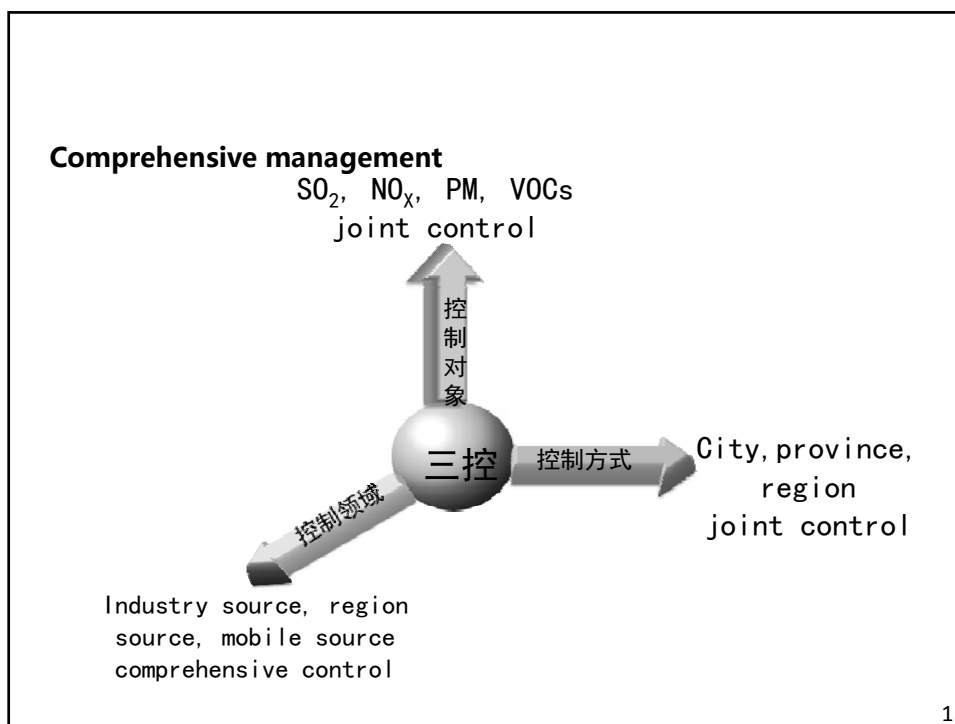
II. General thought of air pollution prevention and control

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Complicated conformation of PM_{2.5}



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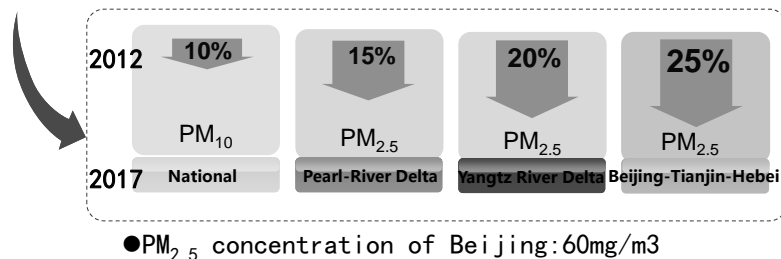


III. Air pollution prevention and control action plan

The Goal of "Action Plan"

Goal : after 5 years' efforts, the overall national air quality shall be improved. Heavily polluted days shall be reduced dramatically. Regional air quality in Beijing-Tianjin-Hebei, Yangtz River Delta and Pearl River Delta will turn better. Through another 5 years' or even longer efforts, heavily polluted days shall gradually be eliminated and the national air quality shall be improved significantly.

Specific indicators by 2017:



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Main measurements of "Action Plan"

- 1 Increase effort of comprehensive control and reduce emission of multi-pollutants
- 2 Optimize industry structure and promote industry restructure and upgrade
- 3 Accelerate technology transformation and improve innovation capability
- 4 Adjust energy structure and increase clean energy supply
- 5 Strengthen environmental thresholds and optimize industry layout
- 6 Play the role of market mechanism and improve environmental economic policies
- 7 Improve law and regulation system and carry on supervision and Management based on law
- 8 Establish regional coordination mechanism and integrate regional Environmental management
- 9 Establish monitoring and warning system to response serious pollution weather
- 10 Clarify the responsibilities of the government, enterprise and society and encourage public participation of environmental protection

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I. Increase effort of comprehensive control and reduce emission of multi-pollutants

A. Enhance comprehensive air pollution control on industrial enterprises

1. Comprehensively control small coal-fired boilers

China is the No.1 country of producing and using coal-fired boilers

➤ 0.62 million industrial boilers, among which 85% are coal-fired, about 75% of boilers are distributed in eastern and middle part of China

Lagging of pollution control devices

➤ Contributed for over 40% soot, SO₂ and NO_x emissions accounted for 22.2% and 10.5% respectively. The 3rd NO_x emission source of China.

Small capacity

➤ Single unit capacity less than 5 burnt-ton/hour

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I. Increase effort of comprehensive control and reduce emission of multi-pollutants

1. Comprehensively control small coal-fired boilers

“the source is given priority, the end is complementary “

- **a. Phase out small coal-fired boiler.** By 2017, unless in special needs, coal-fired boilers with size below 10 tons of coal burned per hour will be phased out in urban area . Central heating units are going to replace scattered coal-fired boilers in chemical, paper, printing, leather making, pharmaceutical and other industries concentrated areas.
- **b. Clean energy or high efficiency utilizing.** Electricity, new energy, clean coal and efficient energy saving boiler will be used in areas without gas and heating supply.
- **c. Strict thresholds of coal-fired boiler project.** New coal-fired boilers with capacity below 20 tons per hour will not be constructed in prefecture and upper level cities; coal-fired boilers with capacity below 10 tons per hour shall be forbidden to be constructed in other areas in principle.

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I. Increase effort of comprehensive control and reduce emission of multi-pollutants

2. Accelerate desulfurization, denitrification and dust removal retrofit projects in key industries

SO₂

•Desulfurization facilities must be installed in every coal-fired power plant, sintering machine and pellet production equipment of iron-steel enterprises, catalytic cracking units of oil refining enterprises and non-ferrous metal smelting enterprises. Coal-fired boilers with over 20 tons of coal burnt per hour should install desulfurization facilities.

NO_x

•Denitrification facilities should be installed in all coal-fired units except circulating fluidized bed (CFB) boilers; low NO_x combustion technology should be applied and denitrification facilities should be installed in new dry cement kilns.

Dust removal

•Existing dust removal facilities in coal-fired boilers and industrial furnaces should be upgraded.

I. Increase effort of comprehensive control and reduce emission of multi-pollutants

3. Strengthen VOCs control

Comprehensive control for key industries

- Comprehensive VOCs control should be implemented in petrochemicals, organic chemicals, surface coating, packaging, printing and other industries.
- Technology transformation of 'Leak Detection and Repair' should be conducted in petrochemical industry.

Fuel recovery

- Actively carry out oil and gas recovery in crude and refined oil products dock.
- Complete oil and gas vapor recovery in petrol stations, oil storage tanks and oil tank trucks within limited time.

Popularization and application low volatile solvent

- Improve VOCs emission limit standards for coatings, adhesives and other products
- Promote the use of water-based paint
- Encourage the production, sale and use of low toxicity, low volatile organic solvents

I. Increase effort of comprehensive control and reduce emission of multi-pollutants

B. Enhance area source pollution control

Comprehensively control urban dust



- Strengthen the dust regulation in construction site and actively promote green construction. Construction site should be fully enclosed by setting protection wall and the ground of the site should be hardened.
- Sediment transport vehicles should be sealed and gradually installed satellite-positioning systems.
- Promote low-dust practices such as automated road sweeping.
- Closed storage facilities or wind and dust protection facilities should be built in large material and coal stockpile. Promote the forestation; increase the green area in the cities and suburbs.



Advance oil and smoke treatment in catering services industry

Efficient oil and smoke purification facilities should be installed in cooking places. High efficient household hood should be promoted as well.

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II. Promote industrial restructure, reduce excess capacity

1. Strictly control new capacity in high energy consuming and high polluting industries

- Revise the entrance requirements of high energy consuming, high polluting and resource-intensive industries; clearly define the energy and resource saving, and pollution emission indicators.
- New built, modified and expanded projects should fully offset (100% or more) the production capacity increases.

2. Accelerate elimination of backward productivity

- Complete the backward productivity elimination target required in "12th Five Year Plan" one year ahead
- Each region should set up stricter policies with higher standard in 2016 and 2017 to eliminate more backward productivity.

3. Reduce excess capacity

- ◆ The state council issued guidance opinion on reducing excess capacity

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III. Accelerate the adjustment of energy structure, control coal consumption

- The share of coal in total energy consumption will decrease to less than 65% by 2017.
- Beijing-Tianjin-Hebei, Yangtze River Delta, Pearl River Delta, will aim to have negative growth of coal consumption.
 - Among which: raw coal need to reduced 13 million tons in Beijing, 10 million tons in Tianjin, 40million tons inHebei, 20million tons in Shandong
- Prohibit building power facilities for self-supply in the key regions, such as Beijing-Tianjin-Hebei, Yangtze River Delta, Pearl River Delta.

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IV. Strict management of motor vehicle pollution, improve fuel quality

A. Improve fuel quality

2013	2014	2015	2016	2017
Supply National Stage IV gasoline nationwide	Supply National Stage IV diesel nationwide			Supply National Stage IV gasoline and diesel nationwide
		Supply National Stage V gasoline and diesel in Beijing-Tianjin-Hebei, Yangtze River Delta, Pearl River Delta and other big cities		

B. Accelerate the elimination of yellow-sticker vehicles and old vehicles

- 2014, eliminate 6 million yellow-sticker vehicles and old vehicles
- 2017, basically eliminate all yellow-sticker vehicles and old vehicles in China

C. Strengthen environmental management of vehicles

D. Promote new energy vehicles

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V. Establish the monitoring and warning system, cope with pollution episodes

- Ministry of Environmental Protection shall strengthen its cooperation with the meteorological departments to set up heavy pollution weather monitoring and early warning system.
- The Beijing-Tianjin-Hebei, Yangtze River Delta, the Pearl River Delta regions shall build up their regional, provincial, and municipal heavy pollution weather monitoring and warning system by 2014.
- Other provinces and provincial capitals shall complete by the end of 2015.
- Well conduct the trend analysis of heavy pollution weather process, improve the consultation and judgment mechanism, improve the accuracy of monitoring and early warning, and publish monitoring and warning information in time.

(A) Establish the monitoring and warning system

- Cities with air quality below the standard shall formulate and improve their episode plans and publish them to the society.
- Identify main responsibility body, clearly define the emergency organizations and their responsibilities, set up procedures for early warning, forecasting mechanism and response, implement emergency treatment and safeguard measures, etc.
- According to different pollution levels, the decision will be made different.
- Carry out the heavy pollution weather emergency drill .
- Beijing-Tianjin-Hebei, Yangtze River Delta and Pearl River Delta regions shall establish sound heavy pollution weather emergency response systems which coordinate the whole region. Provincial and urban plans shall be submitted to the Ministry of Environmental Protection by the end of 2013.

(B)Emergency plan

- Heavy pollution weather emergency response shall be incorporated into the emergency management system of local government, and implement principal responsibility mechanism.
- Emergency plan shall be rapidly launched according to the warning level of heavy pollution weather, instruct the public to have health protection.

(C)Take emergency measures in a timely manner

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VI. Strengthen leadership and team building, implement supporting measure

(A)supporting measure

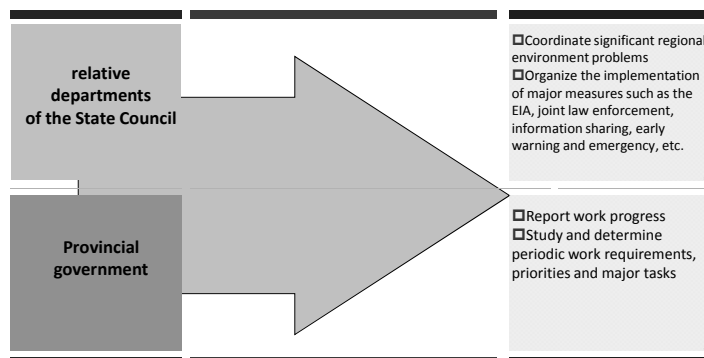
- Use tax price leverage, increase financial investment.
- Improve the environmental laws and regulations system, speed up to modify the environment protection act and the atmospheric pollution prevention act.
- Strict regulation, crack down on environmental illegal activities.

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VI. Strengthen leadership and team building, implement supporting measure

(B) Establish the regional coordination

The national inter-ministerial coordination group for the control of air pollution Beijing-Tianjin-Hebei and Yangtze River Delta regional cooperation mechanism



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VI. Strengthen leadership and team building, implement supporting measure

(C) Allocate goals and tasks, strengthen check

The State Council shall sign “the air pollution prevention and control targets and responsibilities documents” with the provincial governments, which will allocate the targets to the local governments and enterprises.

The compliance evaluation system shall be established with the aim to improve environmental quality.

(D) Strict accountability

◆ Those entities who do not pass the annual inspection, environmental protection department together with the organization department, the supervisory organ, etc., shall question the provincial government and officials, propose correction opinions and urge the accomplishment.

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IV. Working progress

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Working Progress

(A) Put missions into practical

- ◆ Issued enforcement details of the action plan for Beijing-Tianjin-Hebei with NDRC and 4 other governmental departments
- ◆ The State issued working division program for the action plan.
- ◆ To sign air pollution prevention and control responsibility documents with 31 provinces/cities/regions

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Working Progress

(B) Establish detailed supportive policies

- ❑ Related issued 22 supportive policies, including energy structure adjustment, environmental economy policies and responsibilities. To specify key missions, leading organization and time limits for each political measures

【Approved by the State Council on Feb 12, 2014】

- ❑ To establish funds management rule, environmental electricity price, fuel improvement price, subsidy for new energy policy, verification rules etc.

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Working Progress

(C) Regional cooperation

Cooperation between ministries

Cooperation between Beijing-Tianjin-Hebei and surrounding areas

Cooperation mechanism of Yangtze river delta area

Cooperation mechanism of Pearl river delta area

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Working Progress

(D) Alert system

- ✓ Air quality supervision and real time information release
- ✓ Jointly release heavy-polluted weather alert program with Meteorology Bureau
- ✓ To release guidance opinion for heavy-polluted weather days

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Working Progress

(E) Enhance environmental supervision and enforcement

- Develop special enforcement action on air pollution prevention and control
- Jointly release cooperation memo with Ministry of Public Security to enhance enforcement effectiveness

(F) Technical support

- ✓ Initiate clean air research plan

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