



中国环境与发展国际合作委员会

**CHINA COUNCIL FOR INTERNATIONAL COOPERATION
ON ENVIRONMENT AND DEVELOPMENT**

**中国实现“十二五”环境目标机制与政策
——治污减排中长期路线图**

**Policy Mechanisms toward Environmental Targets for the 12th Five-
Year Plan**

**----- Strategies and Policy Studies on
Medium-to-Long-Term Efforts to Reduce Pollution**

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CCICED Task Force on Pollution Reduction

国合会污染减排课题组





Project positioning and focus

- It focuses on the new situation and new issues in pollution control and emission reduction (pollution reduction)
- Study and set up China's pollution reduction roadmap for the 13th "Five-Year Plan" period and even longer term
- It puts forward policy recommendations for achieving the 12th FYP pollution reduction targets, from aspects of coordinated emission reduction, environmental protection policies by regions and categories, total emission control-based economic transformation enhancement policy
- It provides mechanism, policy, measure and international experience for promoting integrated environmental protection work.

Deliverables include: executive summary and policy suggestions, general report: 12 Core experts, 40 researchers, have been working for 18 months. 6 times of Chinese and international TF meetings, 8 times of Chinese TF meetings, and 1 Salon on pollution reduction.

Main Milestones





Content

Review: Assessment of Pollution Reduction under the 11th FYP

Prospects: Transitional Changes Facing China's Economy, Society, and Environment

Strategy: Mid-Term and Long-Term Roadmap

Operational Adjustments: Mechanisms and Policies for Fulfilling Environmental Targets

Policy Suggestions for 12th, 13th FYP & environmental management

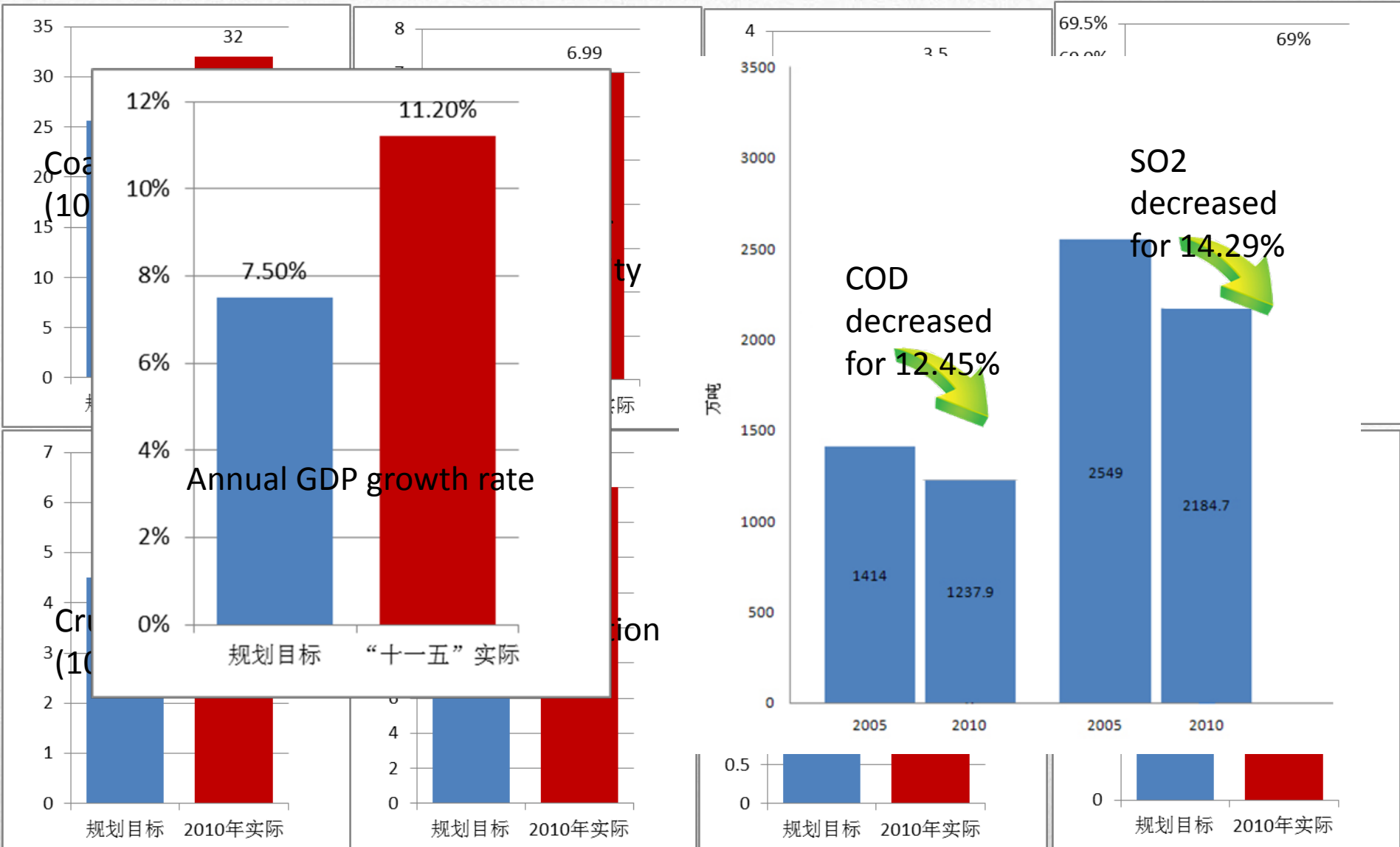


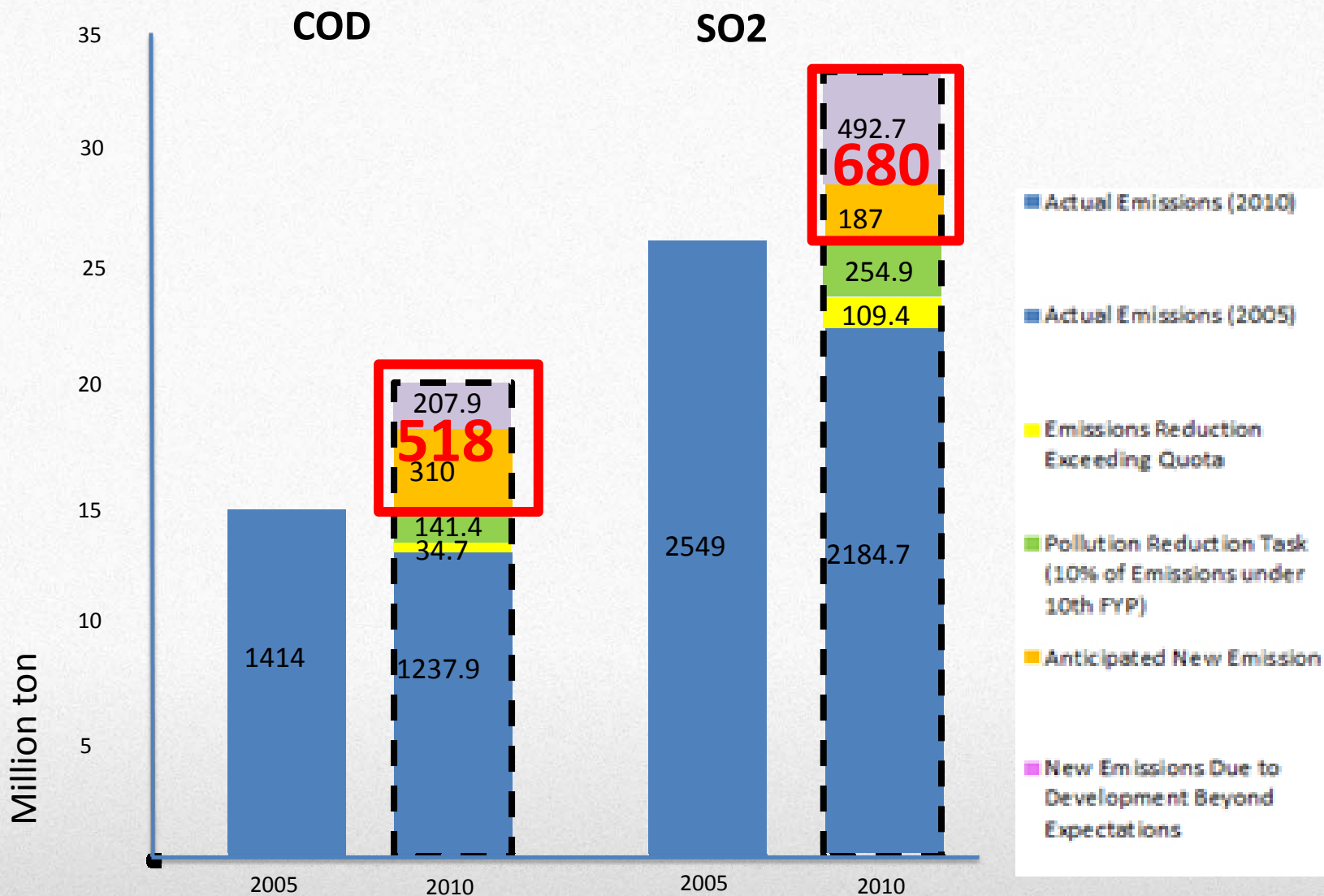
Chapter I Review: Assessment of Pollution Reduction under the 11th FYP

China's 11th FYP pollution reduction was difficult yet effective



Key parameters for social and economic development in the 11th FYP far exceeded the expected scenario

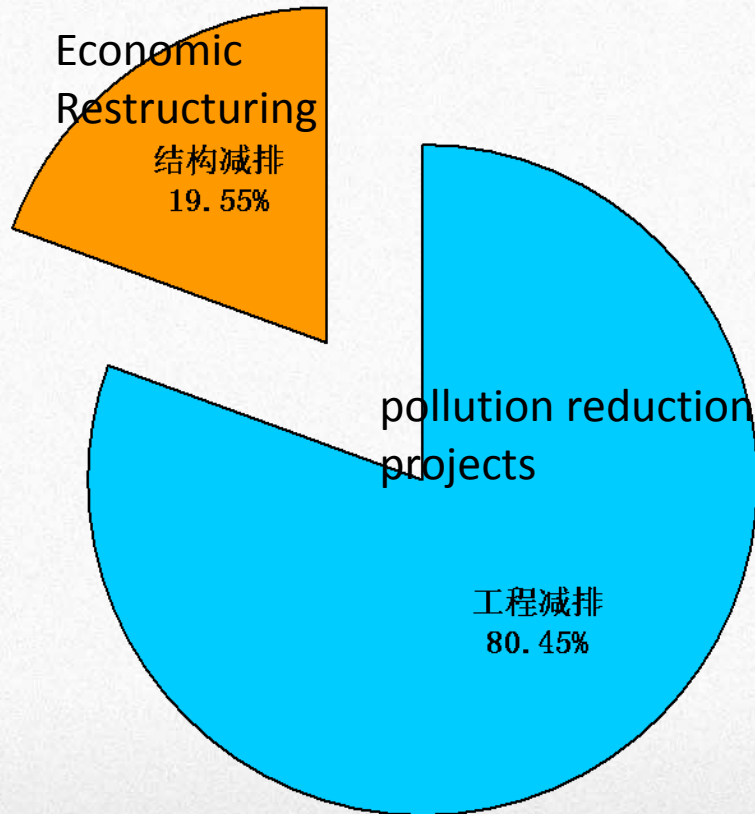




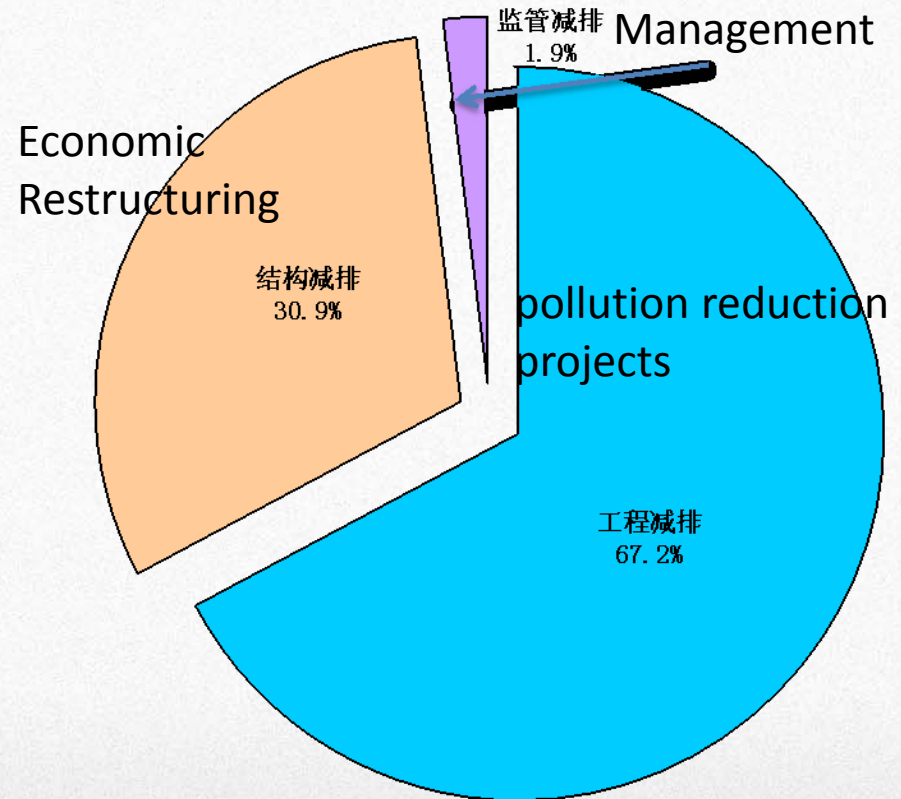


Pollution reduction projects contribute most to the emission reductions

COD Pollution reduction



SO2 Pollution reduction

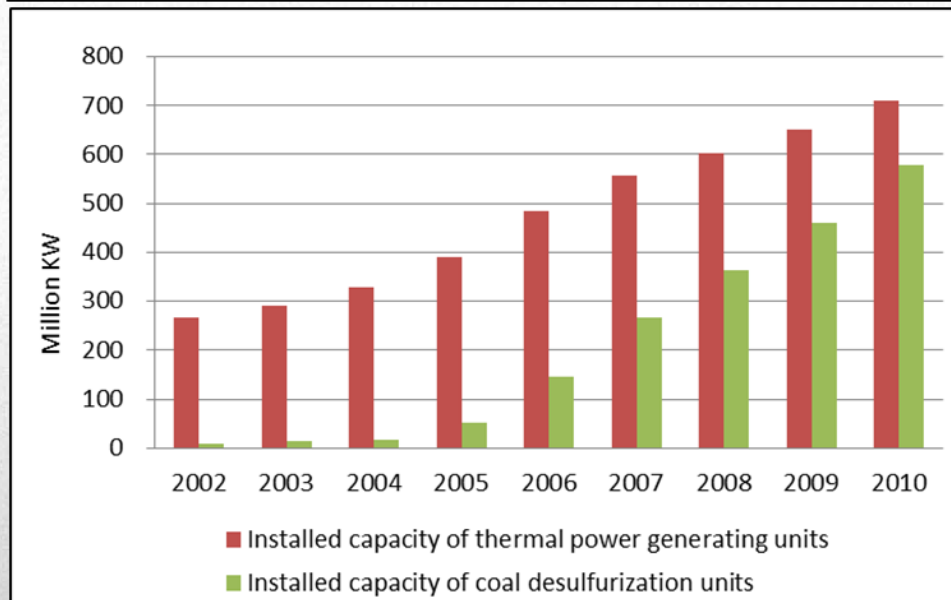
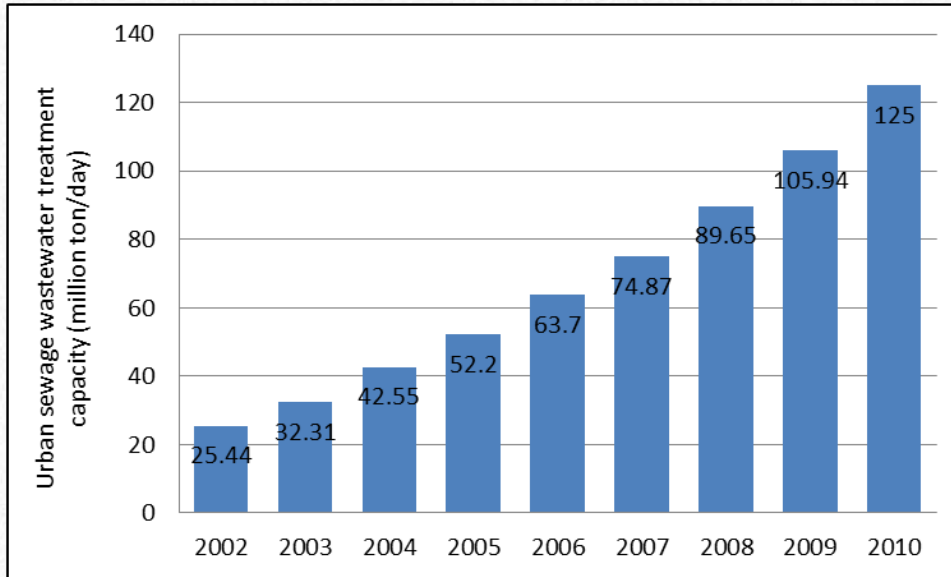


Sewage treatment plants accounted for 58.5% of the total reduction of COD, and 73% of abatement

Desulphurization projects for coal-fired power plants accounted for 59.5% of the total SO2 reduction, and 88.5% of abatement projects



Big breakthrough were made in abatement projects

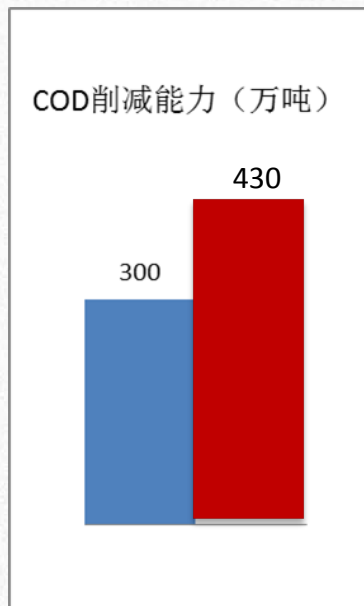


- By the end of 2010, a total of 2,832 urban sewage treatment facilities were built in various cities and counties across China, an increase of around 2,000 during the 11th Five-year Plan
- Daily treatment capacity reached 125 million cubic meters
- Sewage treatment in cities has increased from 52% in 2005 to 77% in 2010
- By 2010, desulphurization facilities had been established for coal-fired power plants with a total capacity of 578 million kw (an increase of 532 million kw in the 11th Five Year Plan)
- The proportion of thermal power generation units with desulphurization equipment increased from 12% in 2005 to 82.6% in 2010

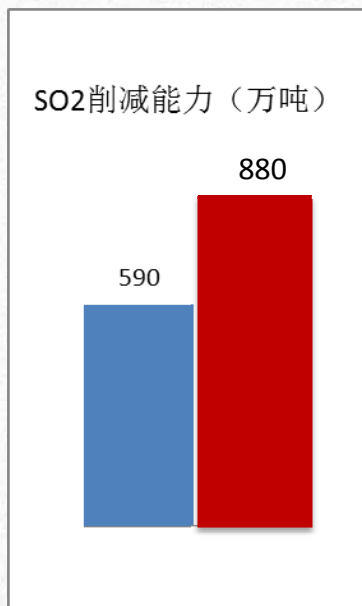


Construction of pollution reduction projects exceeded the planned target

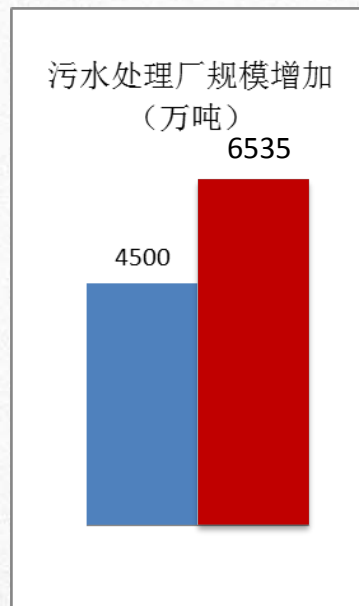
COD exceeded 1.3 million tons



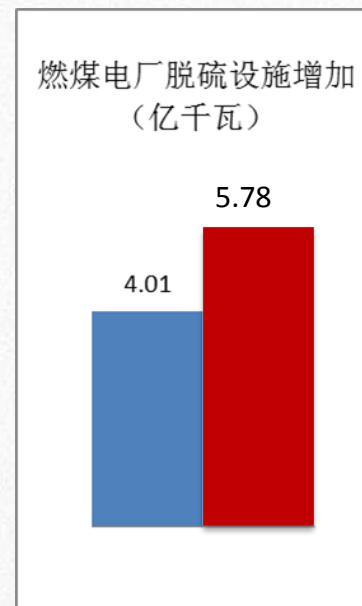
SO2 exceeded the original plan by 49%



Waste water treatment exceeded by 20 million tons



Desulpharized coal fired facility exceeded by 177 million kw

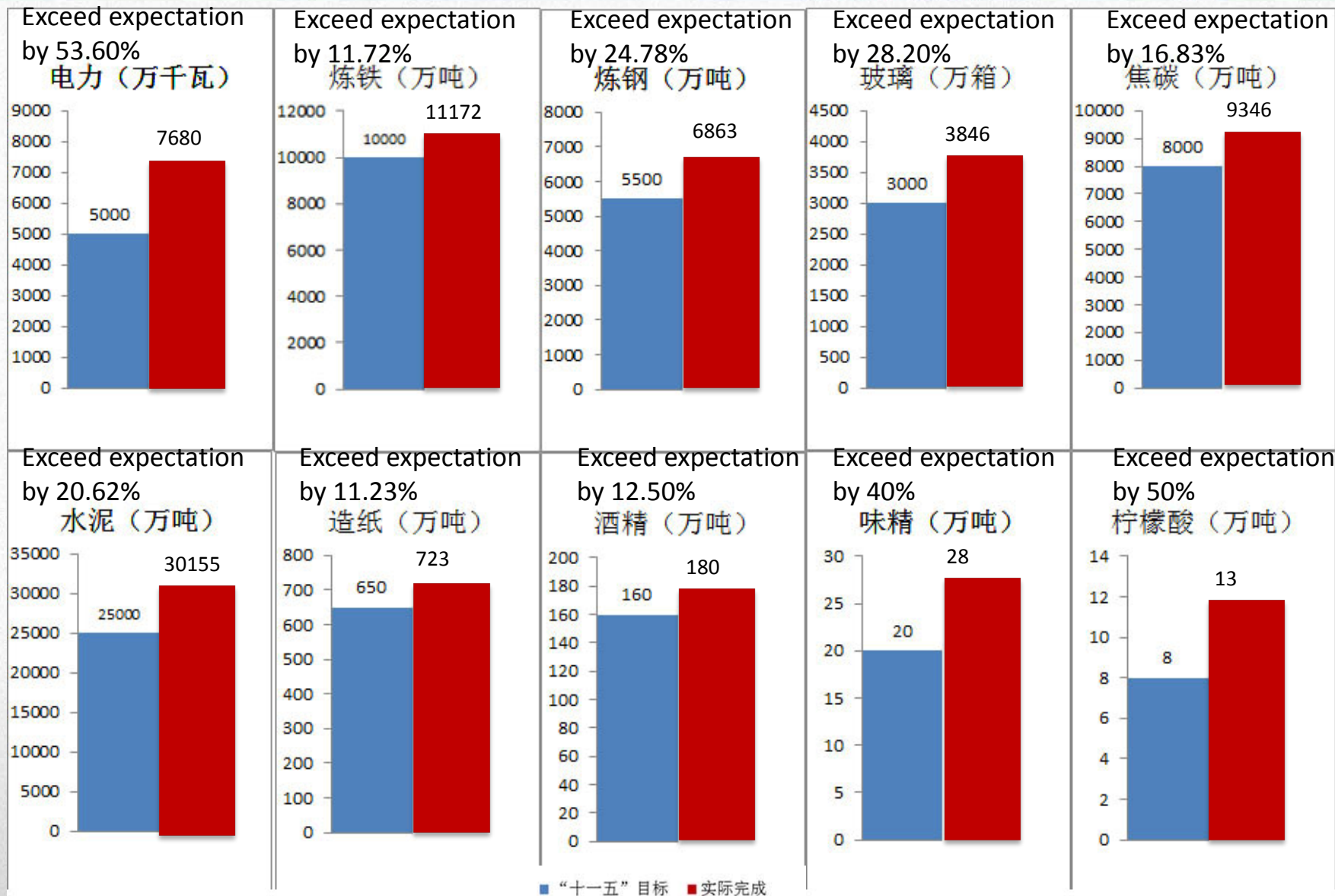


■ 11th FYP Targets

■ Actual Completed



Phase-out of outdated production capacity exceeded the target





Assessment of the policy

Using logic framework and traffic lights methods to analyze the Comprehensive Work Plan for Energy Conservation and Emission Reduction issued by the State Council, to decompose it into an objective, 3 goals, 12 major measures and 62 verifications



完善烟气脱硝技术规范，开展燃煤机组三期后评估。

制定并尽快实施有利于节能减排的发电调度办法。

红

Implement electricity price policy that encourages desulfurization

绿

提高排污单位排污费征收标准，将二氧化硫排污费由目前的每公斤 0.63 元分三年提高到每公斤 1.26 元。

红

主要任务	负责人	完成时限	完成状态	备注	完成日期	完成质量	完成评价	完成说明	完成评价	完成评价	完成评价	完成评价	完成评价	完成评价	完成评价	完成评价	完成评价	完成评价
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Allocate responsibilities to local government and mobilize participation of local governments

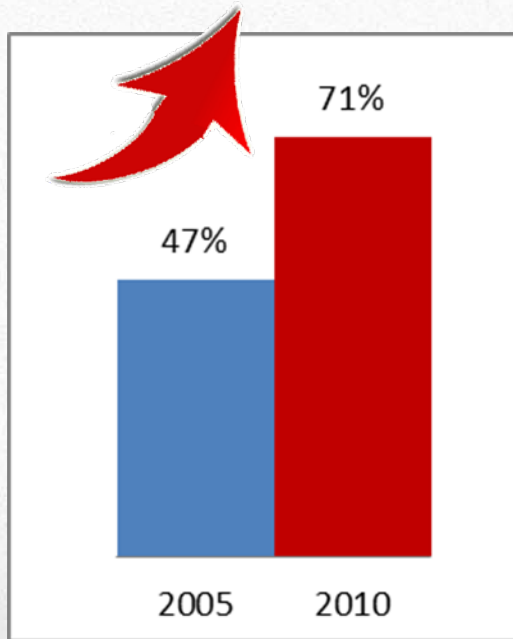
- All provinces allocated environmental targets to governments of lower level. Governments at lower level were responsible for the environment within the boundary of their jurisdiction
- Targets were allocated from level to level, and the responsibility is described clearly. For the first time local governments shoulder the environment responsibility by law
- Set up a series of supportive policies



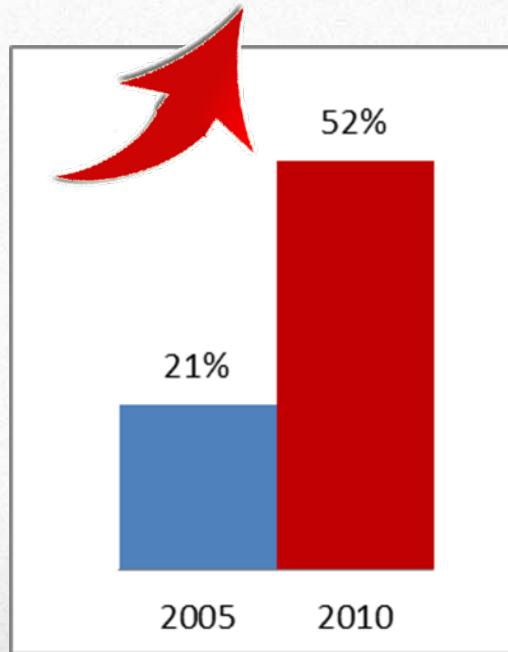
治污减排综合效益明显

Pollution targets has positively affected the upgrading of industrial structure

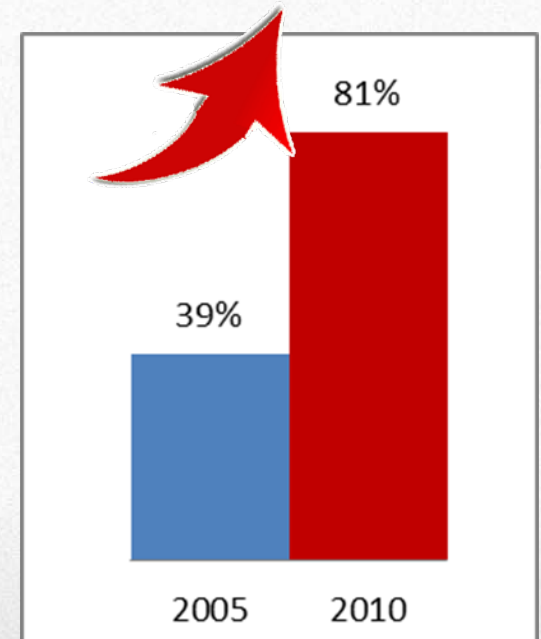
The share of thermal power generation units with total installed capacity of 300 GW and above



the proportion of large-sized blast furnace over 1000 cubic meters

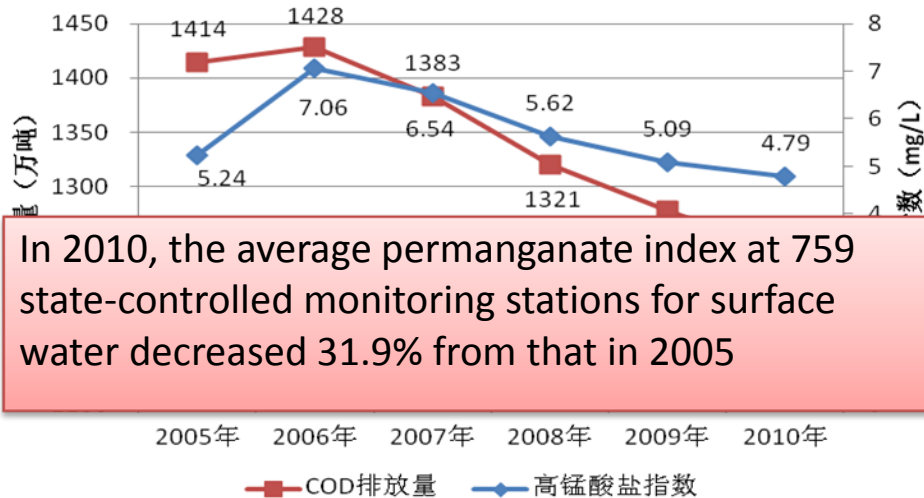


The proportion of new type dry-process cement clinker yield

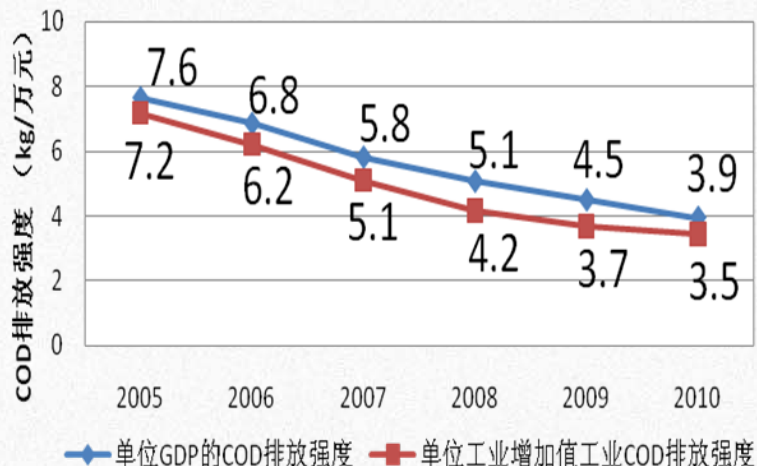




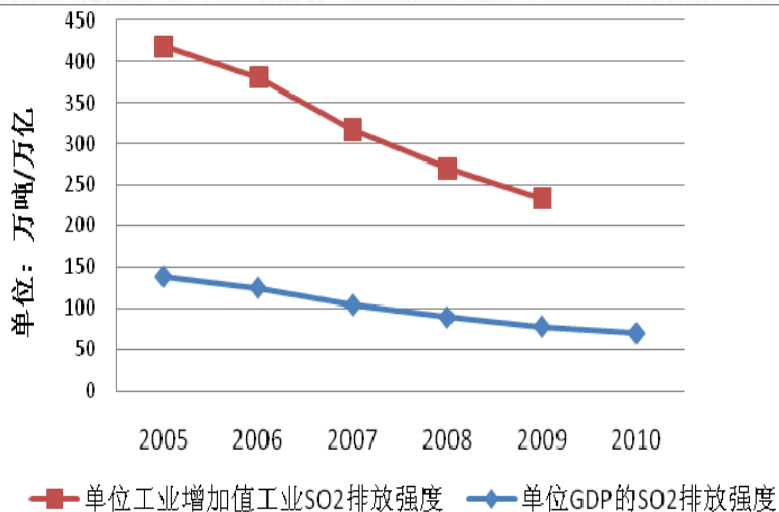
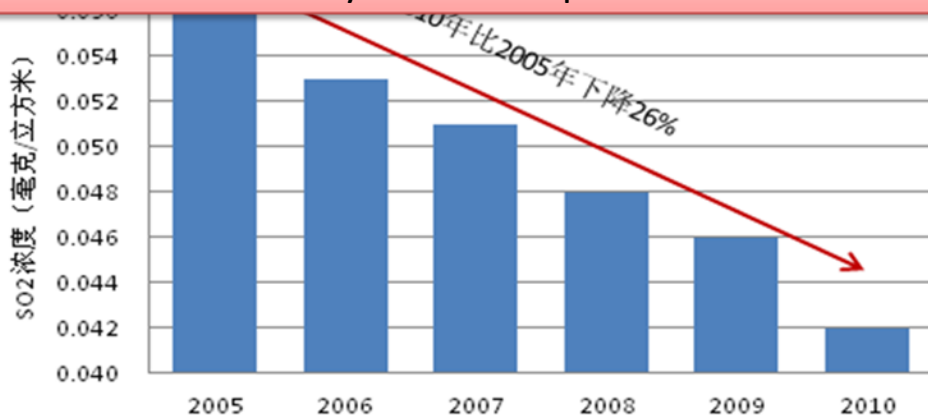
Main pollutants concentration in the environment and per unit GDP pollution emission decreased significantly



In 2010, the average permanganate index at 759 state-controlled monitoring stations for surface water decreased 31.9% from that in 2005



Average SO₂ intensity in key environmental protection cities has declined by 26.3% compared with 2005

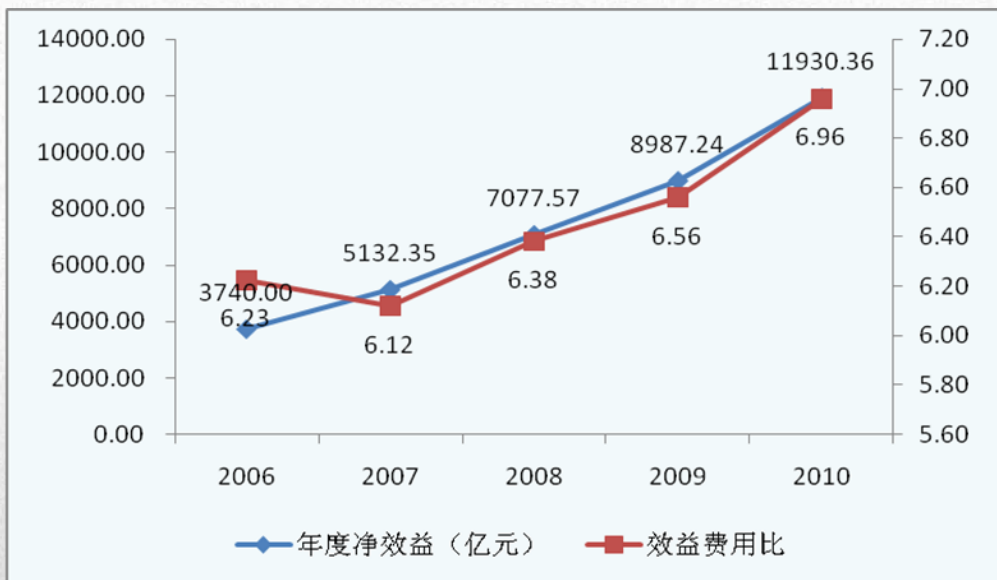




cost-benefit of pollution reduction in 11th FYP

environmental investment from all sources programmed at 2 trillion Yuan in the 11th FYP, including 166.7 billion Yuan from the central government budget—an almost threefold increase compared with the 10th FYP

Initial estimation shows during the 11th FYP, the pollution reduction total cost was 665.09 billion Yuan, the total gain is 4351.84 billion Yuan, the net benefit was 3686.75 billion, the ratio of benefit to cost is 6.54.





Assessment Conclusion

- In the 11th Five-year Plan, by focusing on the two compulsory in **emission reduction targets**, and taking account of **environmental quality improvement**, implementation of greater accountability for achieving environmental protection goals, adopting a package of economic measures such as special price for electricity from power plants with desulphurization equipment, a sewage and garbage treatment fee, and greater efforts in constructing sewage treatment plants and desulphurization facilities in power plants, emission reductions have been achieved which normally occur in the later stage of industrialization.
 - Short-term emission reduction target was successfully implemented
 - a positive contribution was made to the ultimate national goals of economic restructuring and transformation of the growth pattern.



Issues still need attention

Energy consumption for per unit GDP is twice of the world average

Special attention needs to be paid to emission reduction measures implemented **Front-end** of a project, such as increasing the standards of production permits for industries, expanding water saving measures, increase the use of pre-treated coal

Economic restructuring, phasing out of outdated production capacity and clean production still needs to be improved

To explore consolidated multi-stakeholder actions involving government, enterprises and the society. Reduce the use of administrative measures in economic restructuring so as to reduce the costs. Industrial policies should be longer vision and more collaborating. Adjust stimulating policies to restrain the bounce of high pollution, high energy consuming sectors. Further improve the effects of restructuring

Environment investment has a great impact on COD reduction, but the structure of investment has a less impact on it, which shows that pollution reduction were mainly achieved through large volume of financial input.



Chapter II Prospect: economic & social situation prediction

1. Chinese economy is in a transitional period

2. Society's requirement of environmental protection has increased

3. Environmental problems are also in a transitional period



China's economic development is in a transitional phase, which will last for a certain period

China has entered the middle and later stages of industrialization

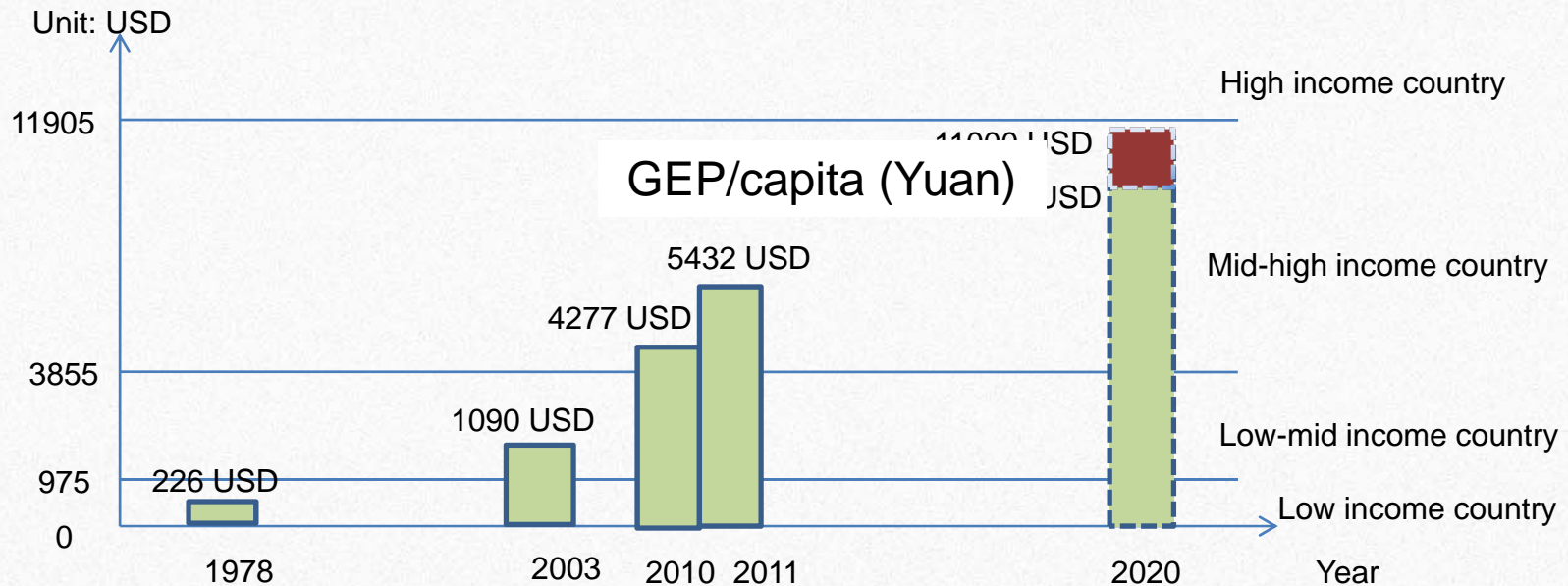
- By 2011, per capita GDP had reached 36,774 Yuan (USD 5,432), China has developed into an middle-income country
- Generally China is in the middle and later stages of industrialization based on Chenery's model
- East China has entered late stage, middle and west China are in the middle stage, some places are still in the starting stage of industrialization

China's economic showcases new features

- Economy will enter middle rate development
- Economic growth start to transit to “consumption-driven”
- Economic gradually restructuring, ratio of secondary industry has a modest decrease
- West China has robust development and contributes to a diversified growth pattern on regions



Industrialization will be completed in around 2020



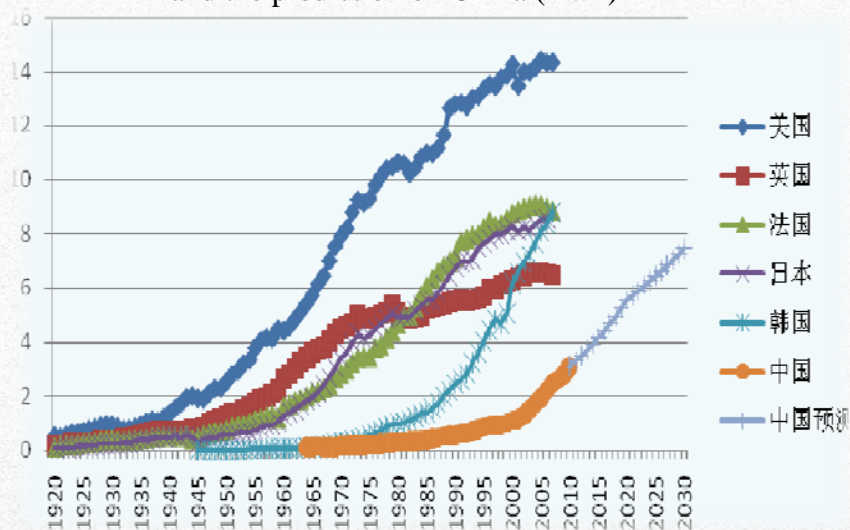
- In around 2020, China may join the ranks of the world's high-income countries, and enter the post industrialization phase
- Around 2030 China will finish its urbanization, whose rate will reach 67%.



In around 2025, the increase of per capita energy consumption will slow down, and be

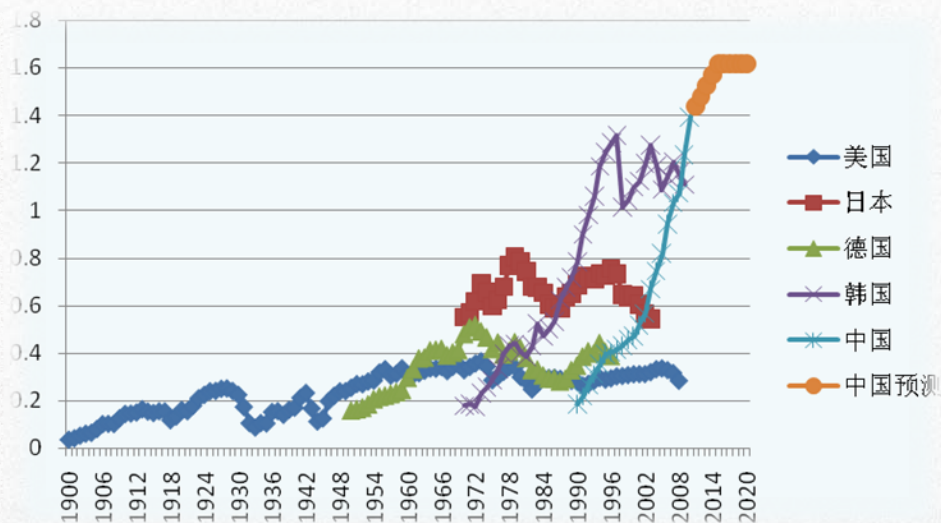
- Under the low scenario, China's steel production will keep growing until 2015;
- Under the middle scenario, it will keep growing until 2018

Per capita electricity consumption of major countries and the prediction on China (Kwh)



—— 2010-2020 electricity demand grows annually at 6%, 2020-2030 this number will be 3%. At that time it will be a little lower than current Japan, Korea and France level.

Per capita cement consumption of major countries and the prediction on China (ton/person)



—— China's cement production will still grow at 3-4% annually. It will reach 2.2 billion ton on around 2015 and become steady.



The whole society has new requirements of the environmental protection

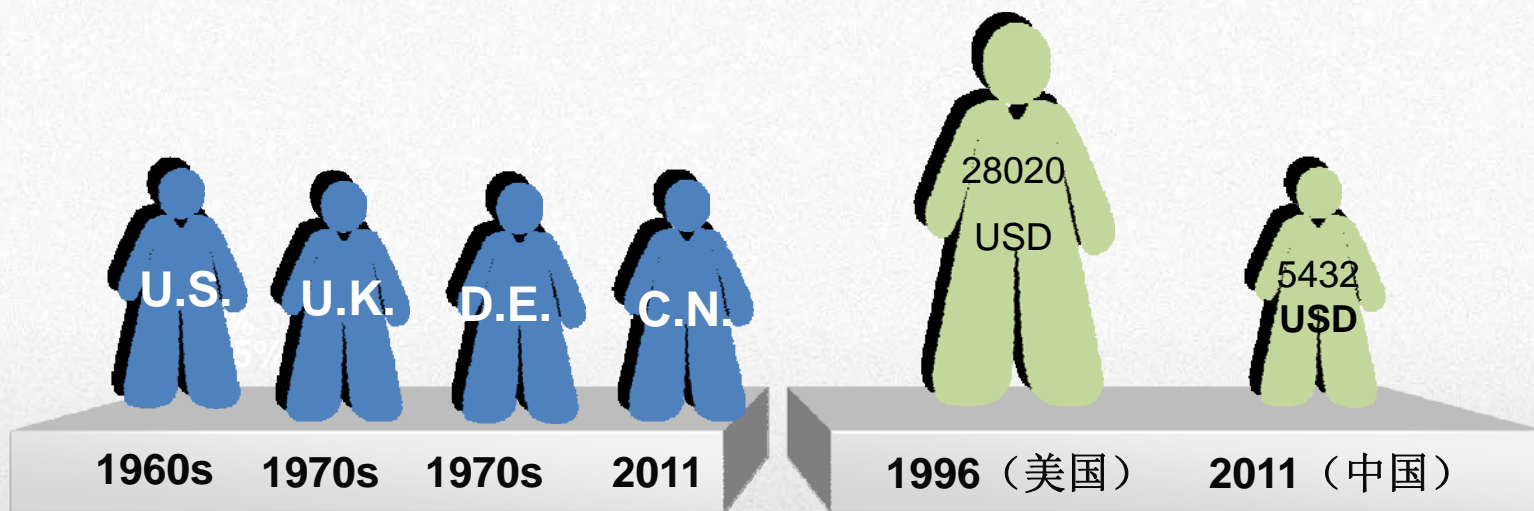
- Public environmental right awareness become stronger. "Neighbor Preference" becomes a big issue in public facility location decision making
- Environmental monitoring device become more portable, and the development of information and internet help to deepen the impact of public appeal to environmental protection
- Environmental protection has become as important as economic growth and living costs. $PM_{2.5}$, together with GDP and CPI are called the new "3P" which draws massive attention of the public



The expectations of the public on the quality of the environment may beyond the stage of economic development

--China's PM2.5 standards is the same as that of U.S. in 1996, China's current GDP/capita is just 1/5 of that of U.S. at that time, and the same level as U.S., U.K. and Germany in the 1960s and 1970s.

--China's industrial energy consumption takes more than 70% of the total energy consumption. 6 high energy consumption industries including electricity, steel and construction material consume more than half of the total energy . And this number is just 25% in the U.S.



*Year of achieved GDP/capita \$5000

Year of implementing WHO 3rd phase PM2.5 standards (GDP/ca)



China's environmental problems are also undergoing a transitional process

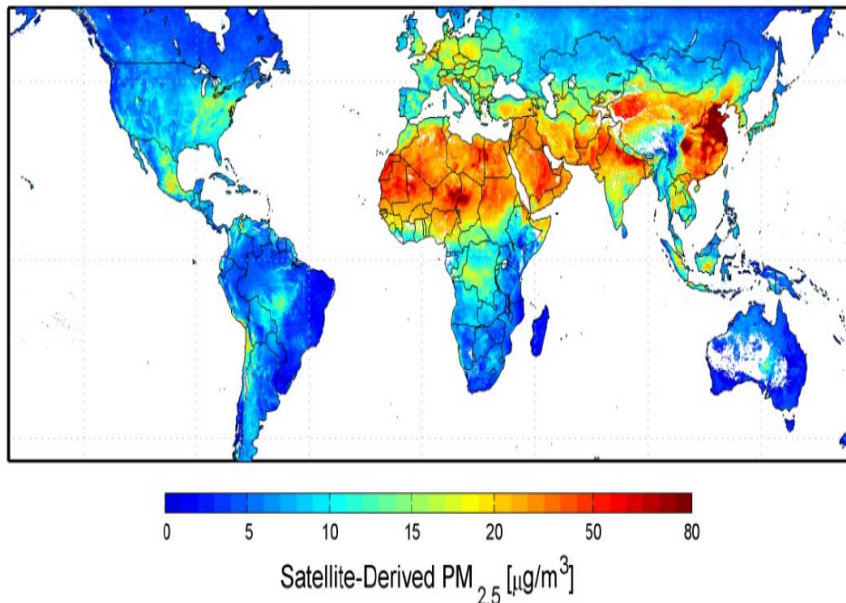
China's environmental problems are not fully synchronized with the stage of economic development

Greenhouse gas and PM10 (PM2.5) control outstrip the economic development stage

Heavy metal, soil pollution, sewage and waste disposal lag behind the economic development stage

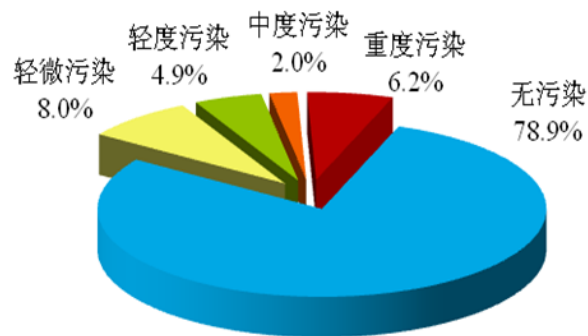


When China completes industrialization and urbanization, environmental issues will become more complex, and environmental protection will face new challenges



Regions with PM_{2.5} concentration exceeds the standards

PM, ozone and acid rain characterized secondary pollution is aggravating



Soil pollution in 2011

环境问题修复任务艰巨

Environmental recovery task is tough

—Accumulative pollution, and high emission

Environmental issues are more complex

—industrial allocation and resource endowment, ecosystem vulnerability are not coordinated;

—pollution in living and consumption

Environmental quality improvement

become more difficult

—High-income, post industrialization and all round better off society call for better environment



Environmental problems are changing, and the control strategy needs adjustment

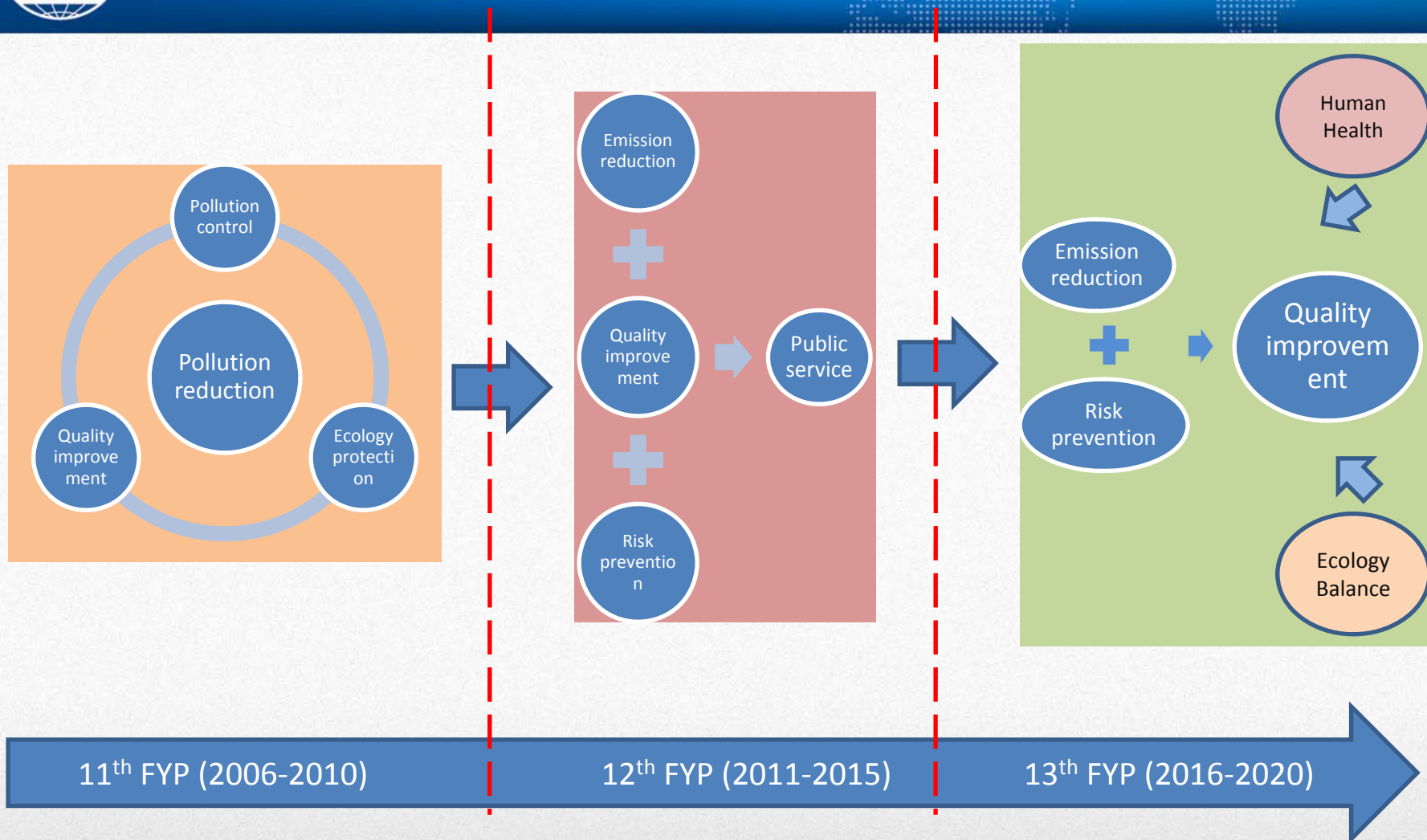
- **Regional pollution becomes more significant, and the regional environmental management strategy need to be adjusted.**
- **The method of the secondary pollutants control represented by PM2.5 has many differences with that of the traditional pollutants control**
- **Inter-phase transfer of pollutants, confrontation of control strategies targeting different pollutants and other problems need the introduction of multi-pollutant coordinated control system**
- **Centralized high incidence of environmental risk situation needs to be explored and combated**
- **Public attention to the environmental quality has been increased, resulting in the debate of pollution control effect and environmental quality improvement speed. Cost-efficiency in large-scale pollution control needs to be studied**
- **The people's livelihood and environmental equity and justice issues taking human health as the core are strengthened**



Chapter III (Strategy) Middle and long term road map

Promote total emission control, environmental quality improvement and risk prevention in a coordinated way

Improve the emission reduction path

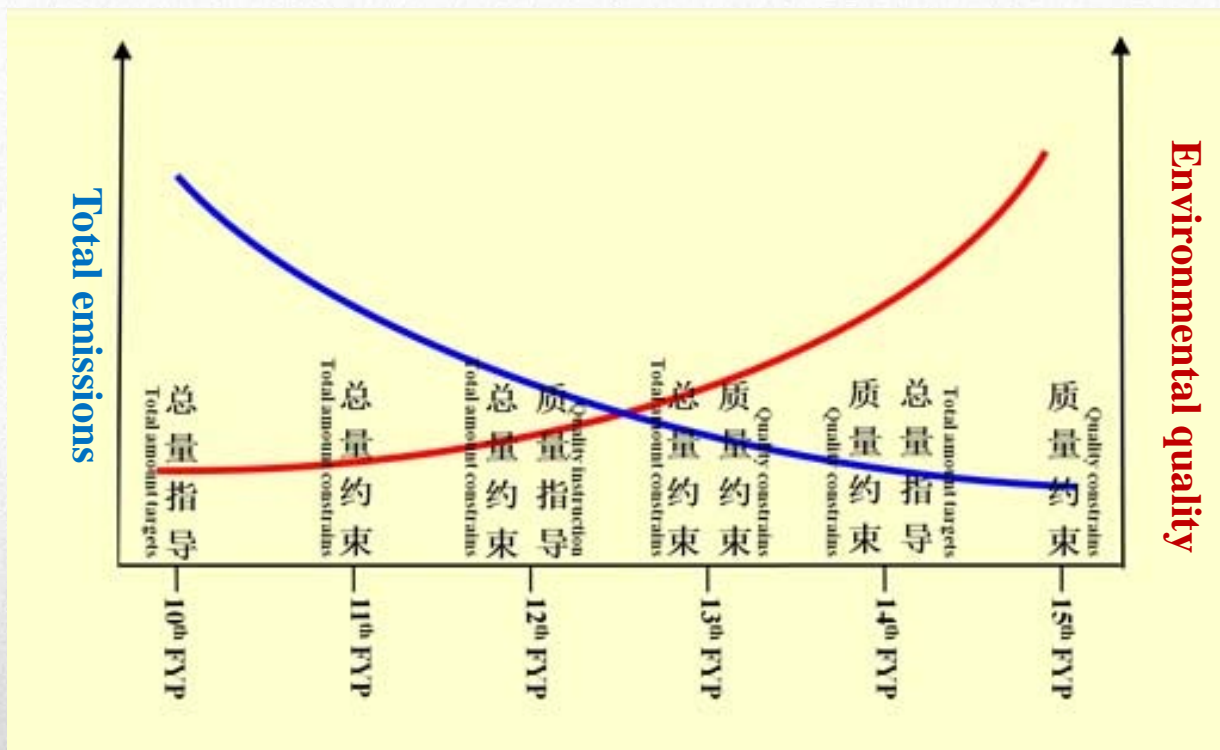


Economic development stage, situation transformation of resources, energy and environment will change the total amount-quality-risk interaction



Significantly enhance the strategic guidance effects of environmental quality improvement

- Environmental management strategies based on the improvement of environmental quality should be established as soon as possible
- Form a joint driving mechanism that the environmental quality forces total emission reduction, and the total emission reduction forces economic restructuring



- Establish the double control system of pollutant total emission control-quality improvement



Increase the weight of environmental quality in the evaluation of local government performance

- Consider environmental quality objectives as important contents of ecological civilization
- The local government should make maintaining the basic environmental quality as the bottom line of the urban development, and implement pilot for environmental quality binding control
- Local governments in regions of Beijing-Tianjin-Hebei, Yangtze River Delta, and Pearl River Delta can try first.
- The government should consider the voice of the public in the design of goals and targets of environmental quality
- Figure out big dischargers and big polluters in deciding the task objects
- Implement the fee (input) and efficiency (quality improvement) priority in the choice of measures

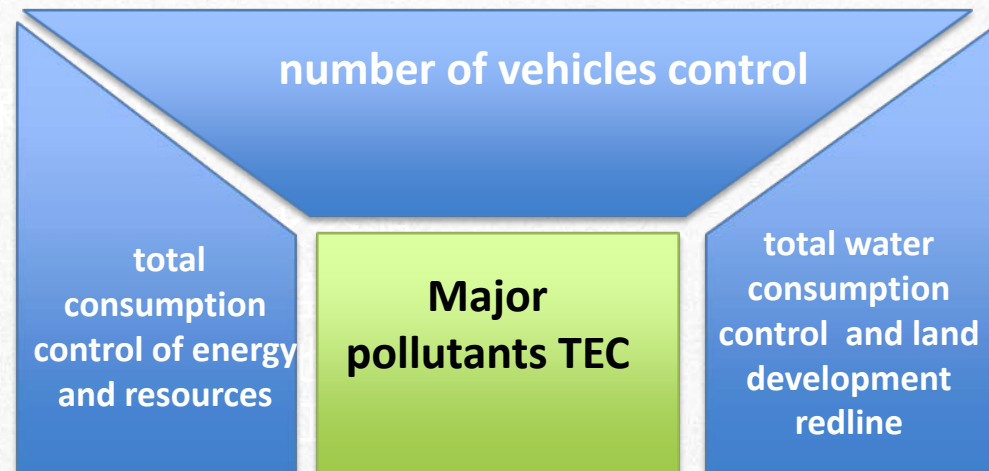


Promote institution development on environmental risk management

- Develop goals and strategies for national environmental risk prevention and control
- Strengthen environmental risk management in the sense of enterprises pollution, human health, and ecosystem integration, and gradually build risk management system which is different from ordinary quantity control
- Refer to European, American and Japanese experiences, to build judiciary system involving personal and public litigation of environmental damage, strictly implement the main responsibility of enterprises, and promote the implementation of damage quantitative evaluation and compensation system



TEC should be embedded in integrated pollution control framework, and function together with multi measures.

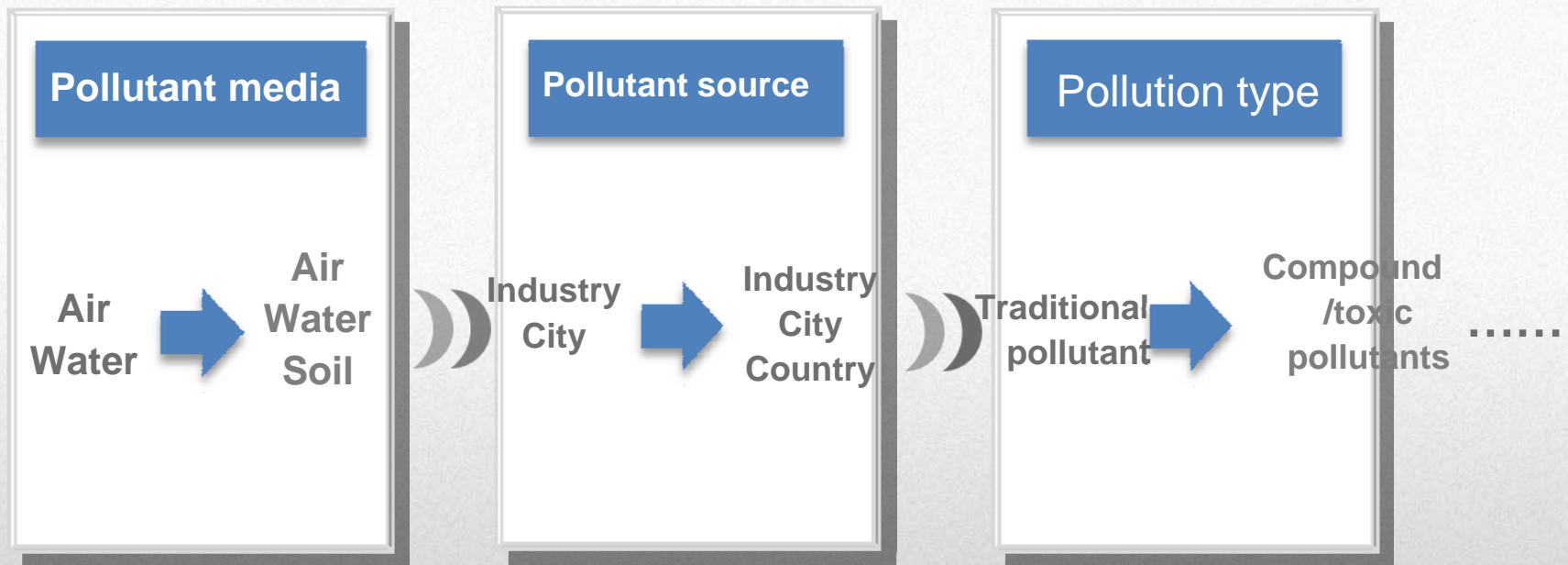


The linkage of emission reduction with other measures should be further strengthened, so as to make emission reduction bring along pollution control, and to establish a TEC-centered pollution source control system.



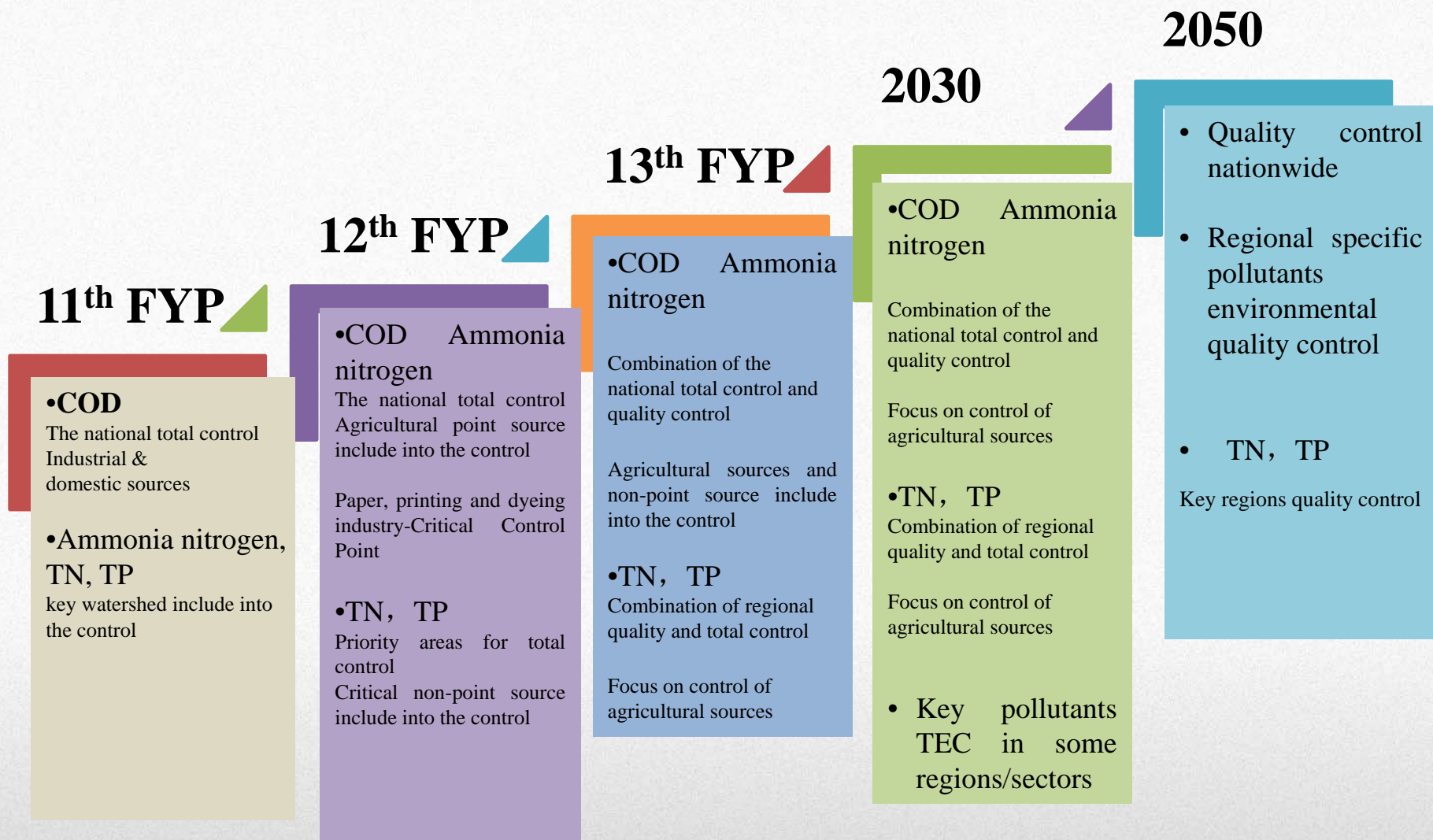
Important directions of pollution control and emission reduction

China should strengthen efforts to control regional and industrial toxic and hazardous substances (such as heavy metals and persistent organic pollutants), volatile organic compounds (VOCs), and substances that consume oxygen in water (total nitrogen and phosphorus), and launch pilot projects to control non-point sources of agricultural pollutants



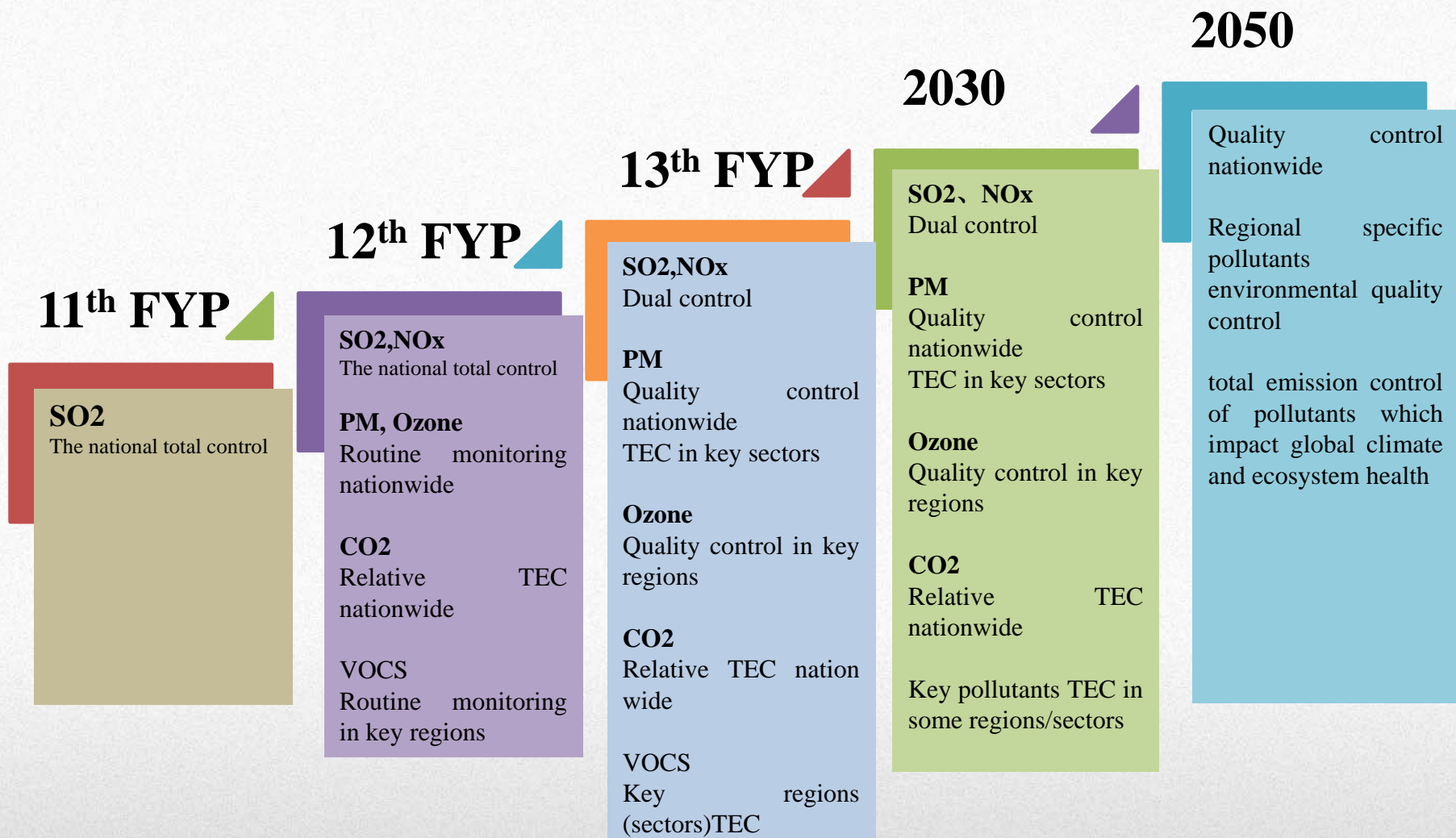


Road map for water pollution control





Road map for air pollution control





China's Medium-and Long-term Pollution Control and Emission Reduction Roadmap

Projects	11 th Five-Year Plan	12 th Five-Year Plan	13 th Five-Year Plan	2020-2030	2030-2050
Key Points	Taking total amount control as the core	Three major aspects & basic environmental public service	Attach equal importance to pollution control and emission reduction as well as quality improvement; pollution reduction and risk prevention with more consideration to the quality factor, human health, and ecosystem	Focus on quality improvement, continue to promote the prevention and control of pollution, vigorously guard against environmental risks, protect human health, and consider the balance of the ecosystem	Focus on human health, ecosystem, and the environmental quality
Evaluation mechanism	Total amount control	Total amount control and quality instruction	Pay equal attention to total amount control and quality control, and emphasize quality control in some areas	Quality control, total amount instruction, continue to strengthen total amount control in the areas not reaching the standards	Quality control in different areas



China's Medium-and Long-term Pollution Control and Emission Reduction Roadmap (cont.)

Projects	11 th Five-Year Plan	12 th Five-Year Plan	13 th Five-Year Plan	2020-2030	2030-2050
Binding Control Factors	National sulfur dioxide and the COD total amount control, total nitrogen and phosphorus control in key areas	Total amount control of national sulfur dioxide, nitrogen oxides, COD, and ammonia; total amount control of heavy metals, total nitrogen, and total phosphorus in key areas	Total amount control of national sulfur dioxide, nitrogen oxides, COD, and ammonia; CO ₂ relative amount control; total amount control of heavy metals, nitrogen and phosphorus, toxic and hazardous substances, and VOC in key areas; quality control of fine particulate matter, ozone, nitrogen and phosphorus in key areas	National quality control as the main task, taking into account the total amount of major pollutants control in some areas in some industries	Environmental quality control of pollutants with regional characteristics
Controlling Fields	Industrial and city life	Industry, life, agriculture (large-scale livestock farming), and motor vehicle	Industry, life, livestock and agricultural non-point source pollution	Agricultural non-point source pollution, industry, and life	Agricultural non-point source pollution



China's Medium-and Long-term Pollution Control and Emission Reduction Roadmap (cont.)

Projects	11 th Five-Year Plan	12 th Five-Year Plan	13 th Five-Year Plan	2020-2030	2030-2050
Major Industries	Key industries: electricity, pulp and paper	The key industries extended to general industrial industries (electricity, iron and steel, pulp and paper, printing and dyeing, building materials)	General industry expanded to the whole industry. the expansion of electric power, iron and steel, non-ferrous smelting, building materials, chemical industry, and pulp and paper industry to the petrochemical industry, ammonia, chlor-alkali industry, phosphorus chemicals, sulfur chemical, coking industry, dye industry, non-ferrous smelting, thermoelectric industry (oil, coal), special industry (gold potassium cyanide), and mining and oil exploitation industry is a major source of emissions of toxic and hazardous pollutants		The major emitters industry of trace, poisonous and harmful pollutants
Emission Reduction Ways	Based on project emissions reduction, supplemented by structural emission reduction	Both project emission reduction and structural emission reduction are important	Structural reduction and front-end control as the focus, supplemented by project emission reduction	The middle-front control and production process modification as the focus, supplemented by structural reduction and project emission reduction	The middle-front control and production process modification
Management Mechanism	Government plays the main role	Government as the main role, supplemented by technological progress and market-orientation	Equal importance should be attached to social constraints, administrative measures, policies of standards, and market-orientation	Standard policies, social participation, market-orientation as the main methods, supplemented by government administrative measures	More dependence on standards, policies, and social participation



Chapter IV: Operational Adjustments: Mechanisms and Policies for Fulfilling Environmental Targets

Implementing positively the environmental management transformation

Implement differentiated total emission control in terms of industry and region

Persisting in long-term implementation of predictability management oriented to improved environmental quality



Implementing positively the environmental management transformation to cope with periodic transition of economic and social development as well as environmental issues

- Environmental management pattern should be adjusted with the integration of pollution control, quality improvement and risk prevention
- Lay a solid foundation ahead of time to meet the multifaceted requirements of environmental management restructuring
 - In response to the legal, institutional, managerial, technical and financial challenges, it is necessary to adjust management goals, study preparatory policy and conduct technical innovation in advance, to prepare for management transformation
 - Explore and implement big ministry institution with clearly defined duty and authorize MEP with more coordination and decision making rights on environmental quality management. Authorize more rights on regional environmental quality management to the six regional environmental monitoring centers.



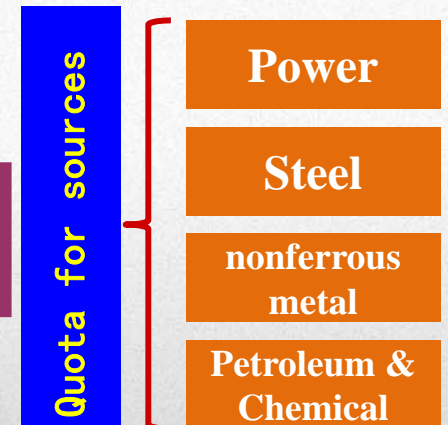
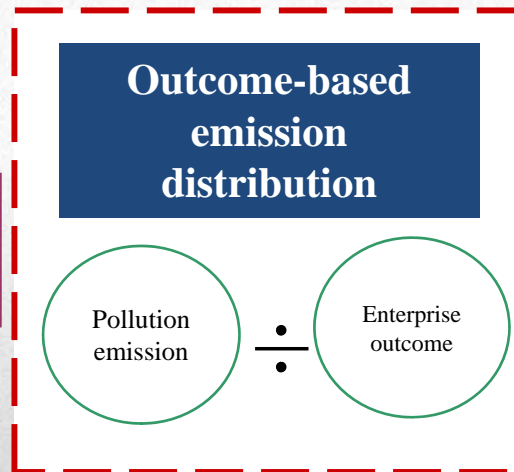
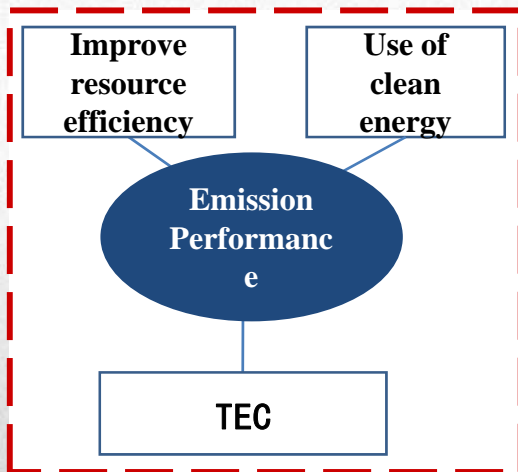
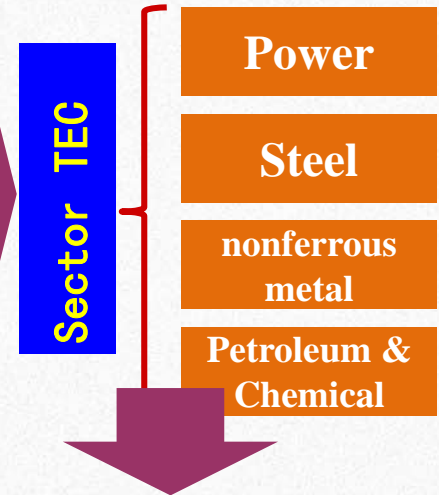
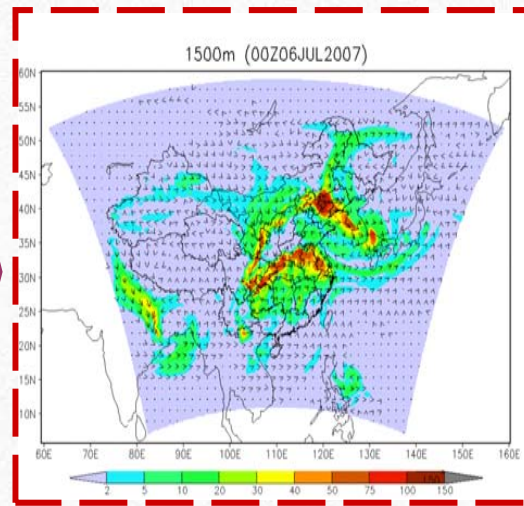
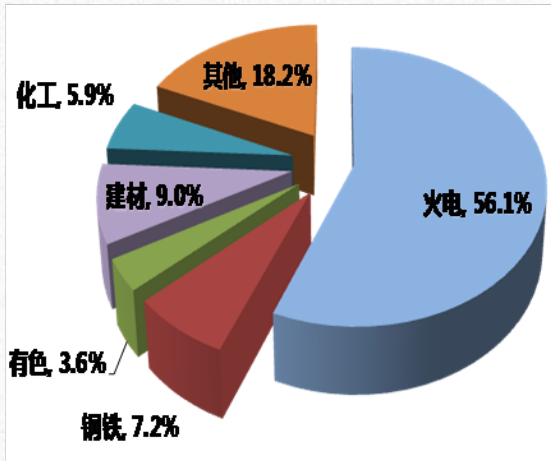
Build participatory and policy driven environmental governance mechanism

- Build effective information publicity institution, to foster civil society in environment field, and improve public supervision of government performance
- Call for enterprises credit evaluation, and encourage public supervision, to build a sound social atmosphere for enterprise to be law-abiding
- Improve economic measure-based decision making mechanism, use measures like EIA, TEC, and regional new projects- forbidden, and improve eco-compensation, environmental cost accounting policy, to build long-effective mechanism centered with economic policy.



Implement differentiated total emission control in terms of industry and region on the basis of national TEC

Top-down: macro control oriented industrial TEC system





Strengthen middle-end and front-end emission control



Introduce the output intensity evaluation and the Top Runner system to typical industries and timely raise and release emission standards in advance so as to optimize industrial development



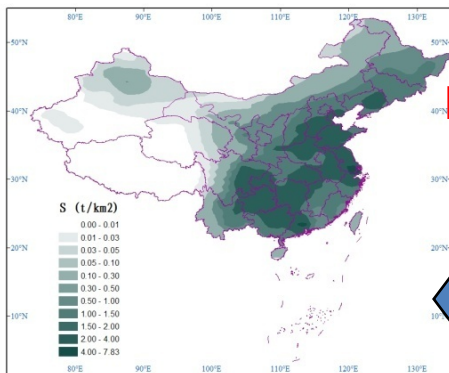
Move the total emission control to the front-end, carry out control of total consumption of resources and energy (coal), and reduce emission at source. Great efforts should be made to assure a number of typical examples that the consumption of resources, energy and environment and the economic growth should be absolutely decoupled during the “12th Five-Year Plan” period



Bottom-up: quality improvement based regional TEC

Nationwide

Control the sedimentation of sulfur and reduce the risk of acid rain



建立各省SO₂排放与硫沉降响应关系以临界负荷约束

Allocation among regions (provinces)

Urban Agglomeration

Reduce acid rain and SO₂ pollution

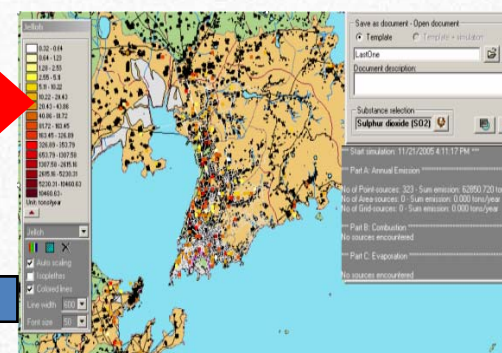


建立城市间SO₂排放与SO₂浓度响应关系以区域空气质量目标约束

Allocation among cities

City

Improve air quality

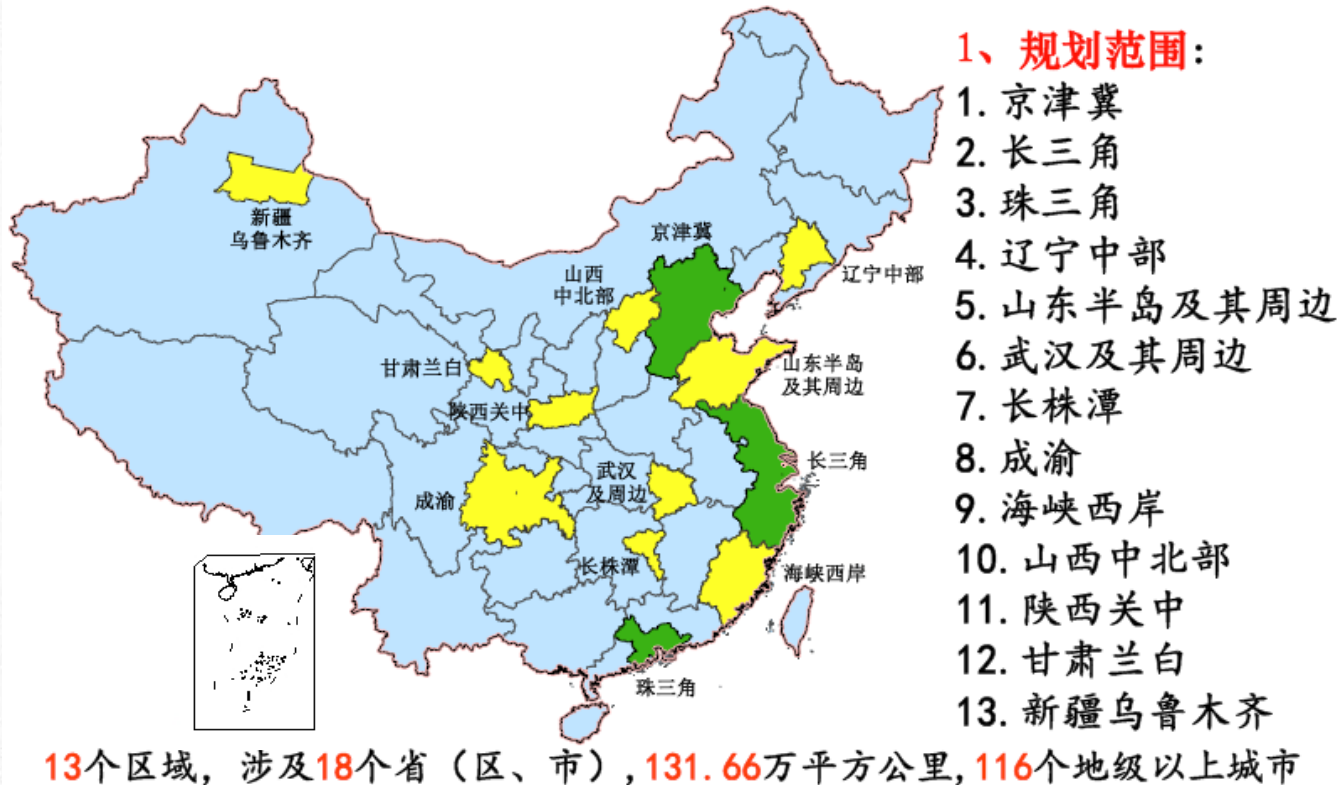


建立各类源SO₂排放与SO₂浓度响应关系以城市空气质量目标约束

Allocation among different pollution sources



13 coordinated trans-boundary air pollution control regions



- Environmental quality improvement oriented,
- Total coal consumption control
- Extend high-pollution fuel prohibited area
- Implement multi-pollutants coordinated control
- Trans-boundary pollution control mechanism



Control of Multi-pollutants

Major sources

Industries
(**power**, cement, steel)

Mobile sources
(road, non-road)

Area sources
(domestic, natural sources)

Key pollutants

Hg

PM

SO₂

NH₃

NO_x

VOC

GHG

Environ. issues

API

Regional haze

Acid rain

Ozone

Multi-pollutant control

Implement different economic control policies according to different measures in order to promote coordinated emission reduction of main air pollutants and CO₂



第五篇（政策）政策建议

Chapter V. Policy Recommendations

根据当前减排形势抓紧出台的“十二五”政策

Policies urgently needed to be introduced in the 12th FYP period based on the current environmental situation

开展“十三五”重大储备性政策研究

Policies needed to underpin the 13th FYP to build an eco-civilization

提高中国环境管理水平

Recommendations for China's Environmental Manage



1、“十二五”头两年减排形势不容乐观

It is not yet optimistic about the overall completion of pollution reduction targets of 12th FYP

- 2011年全国二氧化硫、化学需氧量和氨氮排放量分别下降2.2%、2%和1.52%，超额完成年度计划目标0.7个、0.5个和0.02个百分点；SO₂, COD and ammonia nitrogen emissions decreased by 2.2%, 2% and 1.52% respectively in 2011, exceeding the annual planned targets.
- 氮氧化物排放量上升了5.73%，六大电力上升6.84%，未完成减排任务。
- NO_x emissions rose by 5.73% and emissions of six large power corporations increased by 6.84%.

总体来看，尚不能对实现污染减排目标持乐观态度，尤其是氮氧化物污染减排目标实现难度较大。为实现“十二五”目标，应尽快出台一批政策。

To meet the 12th FYP target, a bunch of policies shall be developed.



着力推进氮氧化物污染减排

Promote NO_x emission reduction

- 严格实施火电、钢铁、水泥等行业氮氧化物排放总量控制，并根据氮氧化物控制目标制定实施排放标准。
- Enforce total NO_x emission control in thermal power, iron & steel, cement industries etc., and link emission standards with the control objectives.
- 出台火电行业脱硝电价优惠政策，制定扶持水泥行业脱硝、钢铁烧结机和玻璃炉窑脱硫的差别电价政策。
- Develop preferential tariff policies for denitrification in thermal power industry, and differential electricity pricing policies for denitrification for the cement industry, the steel sinter machine and the glass furnaces industries.
- 进一步落实机动车氮氧化物减排政策。制定并长期坚持鼓励低排放汽车、限制高排放汽车的政策。探索实施机动车保有量调控政策措施。解决油品质量滞后排放标准问题。根据车用燃油硫含量水平制定不同的消费税征收税率。
- Promote low-emission vehicles and limit high-emission vehicles.; control the number of vehicles on the road; improve oil standards; impose different consumption tax rates based on fuel sulfur content.



推进结构减排，建立落后产能退出长效机制

Promote structural adjustment and establish a long-term mechanism to phase out outdated production

- 调整加工贸易禁止类商品目录，提高加工贸易环境准入门槛，合理调整并相对稳定“两高一资”行业产品的出口退税政策。加强减排政策与行业发展政策的综合协调，对严重污染环境、大量消耗资源能源的产品征收额外消费税，加快实施环境税。
- Coordinate policies for emission reduction and industrial development; adjust the catalogue of prohibited commodities; raise environmental threshold for access to processing and trade; adjust export tax rebate policy; increase consumption tax on polluting and resourcing intensive products; and accelerate the introduction of environmental taxes.
- 寻找农业源、造纸、纺织印染等行业有效的总量控制路径。
- Effectively control the total emissions in agricultural source, paper-making, textile printing and dyeing industries.
- 研究建立污染物产生量和排放量评价政策，制定“领跑者”标准，建立健全相关制度及配套政策。
- Introduce an evaluation policy for pollutant production and emissions; develop the "leader" standards, and improve supporting policies.



强化政策制度落实落地、联动协调、降费增效

Strengthen the implementation and synergies of policies and institution to enhance effects

- 研究并适时推广总量预算管理、总量刷卡管理等量化管理方式
Research and introduce quantitative management methods such as total pollution budget management and total pollution credit card management.
- 针对洗选煤、有机肥、中水回用、污泥处置、雨水收集等环节，完善节能减排协同政策，采用多污染物协同减排的技术途径
Improve synergistic policies for energy saving and emission reduction, and apply multi-pollutant reduction technologies.
- 实施倍量削减政策，对未达标区域，提高区域内其他项目的削减量与新增污染物排放量的比例
Implement differentiated emission reduction ratio depending on compliance and noncompliance regions
- 将现行总量控制及其分配与排污权有偿取得排放权交易、排污许可之间关联互动。
- Link the total emission control and task distribution with emission trading and permit system
- 加快建立重点区域（控制单元）为平台的配套实施政策制度，特定城市、特定江河、特定湖库可以试点“一市一总量”、“一河一总量”和“一湖一总量”制度。
Advance the introduction of supporting policies and systems with key areas (control units) as the platform.



2. 尽快开展“十三五”重大贮备性政策研究 Major Preparatory Policy Proposals for the 13th FYP

完善环保法律法规和制度建设

Improve environmental protection laws and regulations and institutional building

- 加快推进环境保护法、环境影响评价法等法律的修订。
- Accelerate the revision of the *Environmental Protection Law* and the *Environmental Impact Assessment Law*.
- 建立健全监督地方政府履行环保责任的机制，实行环境保护目标责任制和考核评价、责任追究制度。
- Establish supervision mechanism for the environmental performance of the local governments, and implement the target responsibility system, appraisal system and accountability system.
- 将总量考核、环境质量改善和产业结构优化结合起来，进一步完善污染减排考核机制。
- Incorporate the total amount assessment, environmental quality improvement into industrial structural optimization to improve the emission reduction assessment mechanism.



以节能环保为依据，优化宏观经济政策

Optimize macroeconomic policies

- 以节能减排和环境保护为依据，对国家有关发展战略、专项规划、产业政策以及投资、贸易、进出口、财政、税收、经融、价格和土地等政策进行系统梳理和评估。
- **Analyze and assess national development strategies, special planning, industrial policies, as well as investment, trade, import and export, finance, tax, finance, price and land policies based on energy saving and environmental protection.**
- 将治污减排和环境质量改善、公民环境权益保障等列为国民经济和社会发展基本目标，建立从资源开发、能源消耗、生产方式、消费模式、文化建设等全过程综合保障机制。
- **Include pollution abatement, emission reduction, and environmental quality improvement, citizen environmental rights and interests protection into the basic objectives of economic and social development, and establish a comprehensive protection mechanism covering the whole process from resource development, energy consumption, production and consumption patterns, and cultural construction.**



进一步完善建立长效机制

Establish a sound long-term mechanism

- 积极推进资源性产品价格改革和环保收费改革，研究制定有利于环境保护的产业政策，深化绿色信贷、绿色税收、绿色价格、绿色贸易、绿色证券、绿色保险以及“以奖促治、连片整治”等环境经济政策。

Promote reform on resource-extensive products pricing and environmental protection charges; formulate industrial policies conducive to environmental protection; and deepen the environmental and economic policies.

- 健全污染者付费制度，逐步建立环境全成本价格机制。提高涉重金属、持久性有机污染物等收费标准，完善污染排放惩罚机制，实施按日处罚

Introduce a sound pollution payment system and establish the pricing mechanism for full environment costs.

- 研究合理处理市场与补贴问题，使用价格补贴等干预政策需适度，并设定明确的目标和时间期限

Properly address market-subsidy issues and appropriately use interventions with clear objectives and time frame.



3、提高中国环境管理水平的建议

Recommendations for China's Environmental Management

Directly link targets with environmental outcomes
建立排放控制目标与环境目标的直接联系

Goal of environmental laws and regulations:
Protect people's health and ecosystems

环境法律法规的目标：保护人体健康及生态系统



Establish scientifically sound pollution inventories 建立科学的污染物清单

Air Pollution
Sources
大气污染源

Water Pollution
Sources
水污染源

Contaminated
Sites
被污染地块

Sites where chemicals and
hazardous substances are
located as feedstock or
products
存放、储存化学品或含有
害物的产品的地块

databases consistency
数据库的一致性



Promote the use of market mechanisms 推进市场机制的应用

- Establish supporting policies, institutions, and guidance for market-based policy alternatives

为基于市场的政策建立支持机制和引导措施

Control Levels (Caps)

总量

Procedures for
Allocation of
Resources

资源配置程序

Control
Responsibilities

责任



Improve air quality management (1)

改善大气质量管理

- Build effective regional air quality management system
- 建立有效的区域大气管理体系

Lessons from priority
air quality
management regions
优先控制区域经验

Air quality basins
空气质量区界定

Alternative
institutional
arrangements
管理模式的替代方案

Access air quality
modeling capabilities
and needs
大气质量评估
建模能力建设



Improve air quality management (2) 改善大气质量管理

- Coordinate ambient air quality standards, vehicle emissions standards and fuel standards

协调大气质量标准、机动车排放标准和燃油标准



Improve air quality management (3) 改善大气质量管理

- Link total emissions control for major air pollutants with air quality improvement

将主要大气污染物总量控制与改善大气质量相联系

Clearly articulate
environmental objectives

制定清晰的环境目标

Establish a robust system
for identifying violations.

建立识别违规的强硬体系.

Increase detection of Non-
compliance.

加严对非达标者的检测

Electronic monitoring of
pollution through CEMs

在线监测以及配套的法规



Improve water governance (1)

改善水管理

- Restructure fragmented water governance structure

重构碎片化水管治结构

- Integrate water management authorities and improve inter-agency coordination.
综合水管理权，提高部门协调度
- MEP serves as the lead agency to manage water quality for all waters
环保部应作为管理所有水体水质的协调机构



Improve water governance (2) 改善水管理

- Objectives: Protect human health and aquatic life
- 目标: 保护人体健康和水生态
 - Quality standards: swimmable, fishable
质量标准: 可以游泳、钓鱼
 - Consider the costs and feasibilities factors while setting technology-based guidelines for pollutant discharges.
在设定污染排放技术标准的时候考虑成本



Improve water governance (3) 改善水管理

- Empower trans-boundary watershed management committees and hold local officials personally liable

授权跨界流域管理委员会并赋予地方官员个人责任



Improve water governance (4) 改善水管理

- Strictly enforce EIA and “Three-Simultaneous” requirements

严格执行环评和三同时制度

- Enterprises should not be allowed to start up or continue to operate without pollutant discharge permits.
无排污许可的企业不允许开工或运营



Increase penalties for non-compliance 加大对违法者的惩罚力度

- Significantly increase penalties.

大大增加罚金

Per Day, Per Violation Penalty

按日计罚

Capture the economic benefit of non-compliance

没收非法收益



Improve permitting system 改善许可证体系

- Permit discloses detailed information
- 许可证应含有并公开与企业及其排污控制相关的
具体信息
 - Types 种类
 - Concentration of pollutants 浓度
 - Pollution prevention controls 污染控制
 - Emission/effluent 排放
 - Operating limitations 运营限制
 - Required monitoring 监测
 - Reporting and inspection requirements 报告和检验要求



Improve public participation 推动公众参与

Information disclosure: EIA, permits
信息公开

Public interest litigation
公益诉讼

THANKS!

