

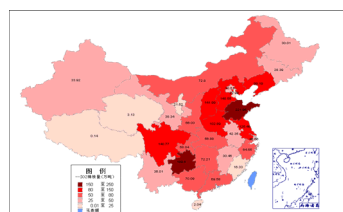
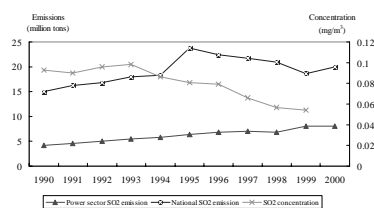
Implementing SO2 Emission Trading in China

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1. SO2 Emission in China

- **Coal-dominated energy structure brings about a large amount of SO2 emission.**
 - **total SO2 emissions: 19.95 million tonnes, and 85% were from direct coal combustion**
 - **power sector is the major source of SO2 emissions: 8.90 million tonnes, account for 45% of total emissions**



2. Acid rain and Environmental Impacts



- **Acid rain are serious**
 - **Acid precipitation covers around 30 percent of the land areas**
 - **48.9% of the cities suffer from acid rain**
 - **high stack sources contribute an increasing percentage of emissions**
 - **economic loss: more than 110 billion yuan**



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3. Control Policies

- **Identifying Critical Control Zones**
- **Limiting the Extraction and Use of High Sulphur Coal**
- **Promoting SO₂ Total Emission Control**
- **Levying SO₂ Emission Charges**
- **Requiring Cities to Comply with National Ambient Standards for SO₂ Concentrations**
- **Adjusting the Composition of the Power Sector**
- **Encouraging Desulphurisation**



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4. Requirements and Existing Foundations for Introducing ET

- **Foundations**

- **Compatibility of Emission Trading and the TEC Policy**
- **Flexible Approach to Meeting Management Requirements**

- **Conditions**

- **Variation of Marginal SO₂ Abatement Costs**
- **Regional Problem (Long distance transportation)**
- **Emission Measurement**
- **Legal Basis**



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5. Emission Trading Pilots

- **Early in the 1980s, China began discussing and piloting emission trading**
- **Pilots in three stages:**
 - (1) **1990 to 1995 – establishing the concept;**
 - (2) **1996 to 2001 – exploring the theory and methods of emission trading; and**
 - (3) **2002 to present – piloting and designing emission trading programs.**



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SO₂ Emission Trading in Jiangsu Province

Scope:	Power sector, 196 power plants in Jiangsu Province
Region:	The province
Total Emission Target:	TEC limits for the Tenth Five-Year Plan period
Allocation Method:	Emission performance Standards (EPS)
Legal Basis:	Document of provincial EPB and Economic and Trade Commission
Trading Situations:	Two power plants carried out a trade
Monitoring and Measurement:	CEMs, periodic source monitoring, and material balance



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SO₂ Emission Trading in Taiyuan City

Scope:	23 key pollution sources accounting for 50% of total SO ₂ emissions
Region:	Urban area (excluding suburb districts and counties)
Total Emission Target:	Cap for year 2005: 125,000 tonnes
Allocation Method:	Historical emissions
Legal Basis:	Regulation on TEC in Taiyuan City and administrative regulation for SO ₂ emission trading in Taiyuan City
Trading Situations:	Training, trading simulation, and implementation beginning January 1, 2003
Monitoring and Measurement:	CEMs, periodic source monitoring, and material balance
Management:	Emission and allowance tracking systems



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6. Opportunities and Obstacles to Implementing Emission Trading in China

- **Feasibility of National Implementation**
- **Issues and Barriers**
 - **Legal Authority**
 - **Uniform Allocation Method Uniform Allocation Method**
 - **Monitoring and Verification**
 - **Coordination with Other Policy Instruments**



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7. Recommendations for Nationwide SO₂ Emission Trading

- **National SO₂ TEC Targets: 17.95million tonnes (for year 2005)**
- **Proposed Implementation Phases by Experts:**
 - **Phase 1: a pilot phase with trading limited to large power plants (i.e., annual SO₂ emissions greater than 5,000 tonnes) in the TCZs;**
 - **Phase 2: an expanded pilot with trading between all power plants in the TCZs on the basis of phase I;**
 - **Phase 3: a nationwide program including all power plants in China; and**
 - **Phase 4: an expanded nationwide program including other types of high stack sources.**



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8. Conclusions

- SO₂ TEC in China should be combined with a national emission trading policy to help attain the control target at lower social cost.
- After nearly 10 years of analysis and emission trading pilots, several cities and regions have practical experience that provide the necessary foundation for introducing emission trading nationwide.
- There are issues and barriers to overcome before implementing a nationwide emission trading program, including legal authority, policy coordination, allocation issues, emission measurement and verification, and supervision and management systems.



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9. Suggestions

- Establish an explicit legal basis for emission trading.
- Strengthen measurement and verification of SO₂ emissions to improve accuracy.
- Design an equitable allocation method that provides proper incentives for sources to take action to reduce SO₂ emissions.
- Implement management systems to collect, verify, manage, and disseminate emission and allowance data.
- Strengthen education and outreach on emission trading.
- Implement emission trading in phases with high-emitting, high stack sources in the TCZs participating in the first phase and a gradual expansion as capacity increases.



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Thanks



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