

青岛市“十一五”SO₂污染控制规划介绍

The Action Plan for SO₂ Pollution Control in Qingdao

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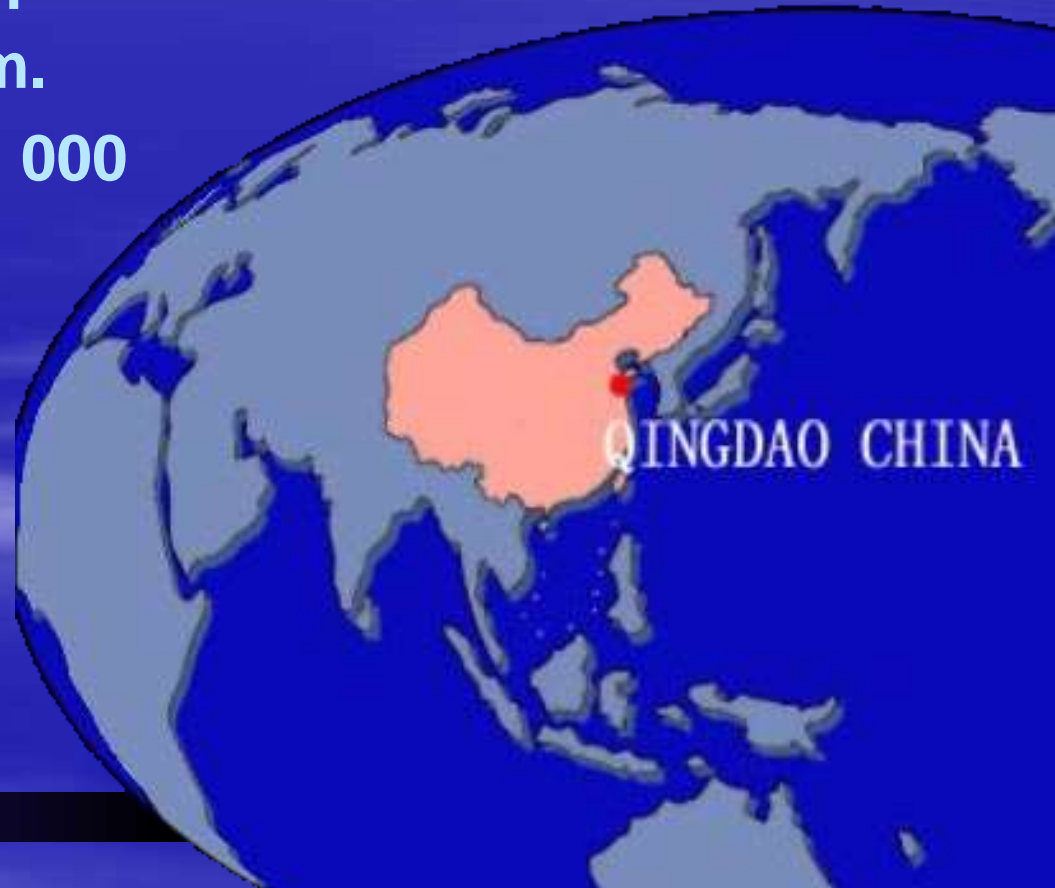
青岛市环保局 Qingdao Environmental Protection Bureau

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A Brief Introduction to Qingdao

- Located in the east coast of China
Adjacent to Korea and Japan
- Total area is 10,654 sq.km.
- Total population is 7,200, 000
- Coastline is 730km



青岛位置

Geographical Features



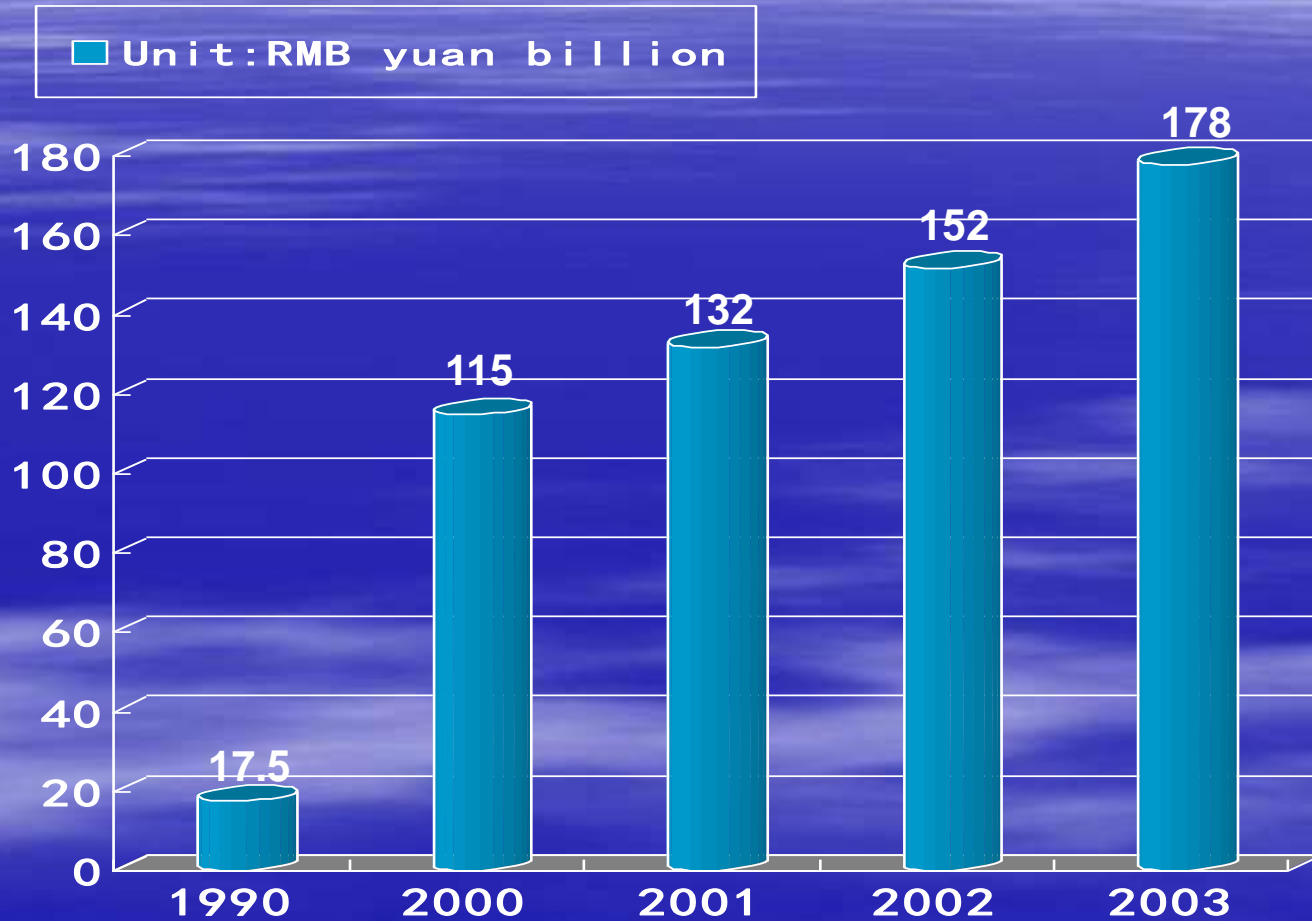
WELCOME TO QINGDAO

The features of Qingdao



- Coastal Opening City in China
- Economic Center City
- City Specially Designated in State Plan
- State Historical and Cultural City
- Famous Tourist Resort

The Rapid Economy Growth in Recent Years



WELCOME TO QINGDAO

主要内容 Agenda

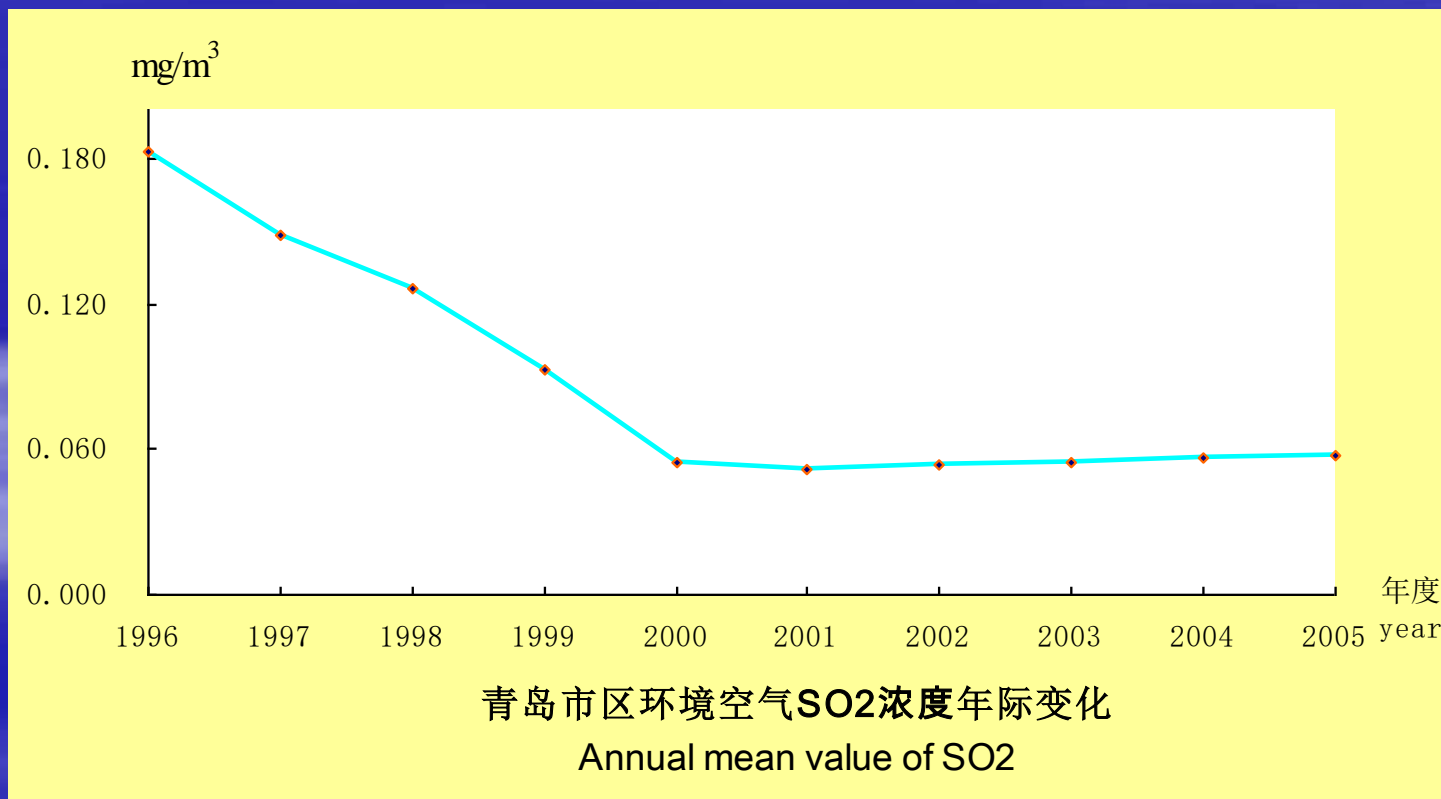
- SO₂污染现状
Present Status of SO₂ Pollution
- 2010年SO₂减排目标
Objectives of SO₂ Emission in 2010
- 主要措施
Key measures
- 实现减排目标面临的主要困难
Difficulties

环境空气中SO₂浓度

SO₂ Concentration in Ambient Air

- 市区环境SO₂年均浓度自“九五”末以来连续六年达到国家环境空气质量二级标准

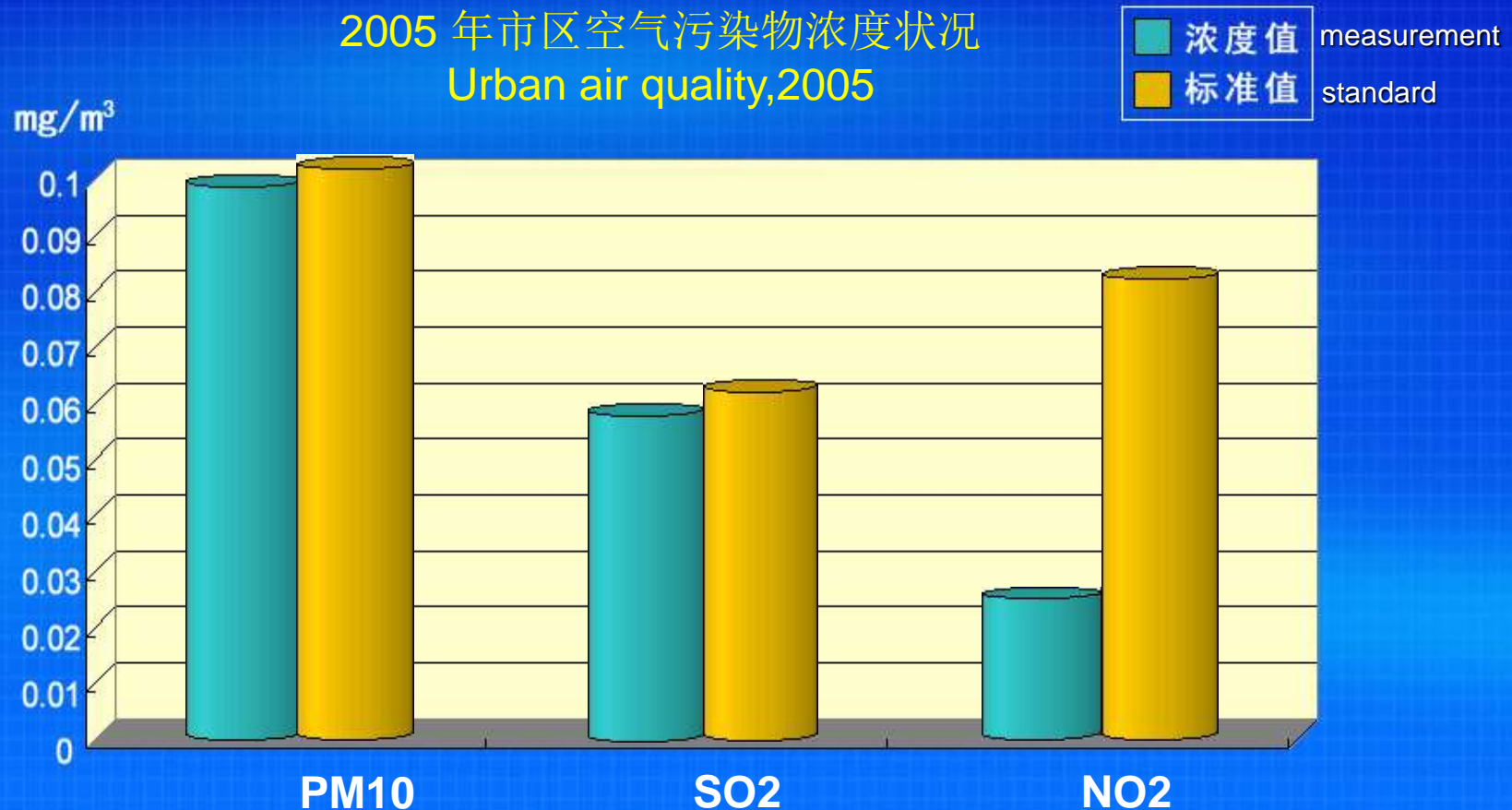
SO₂ annual mean value in urban area has been within the National Air Quality Standard for Grade II since 2000



空气质量问题 Air Quality Problems

- SO₂年均浓度已接近国家二级标准限值

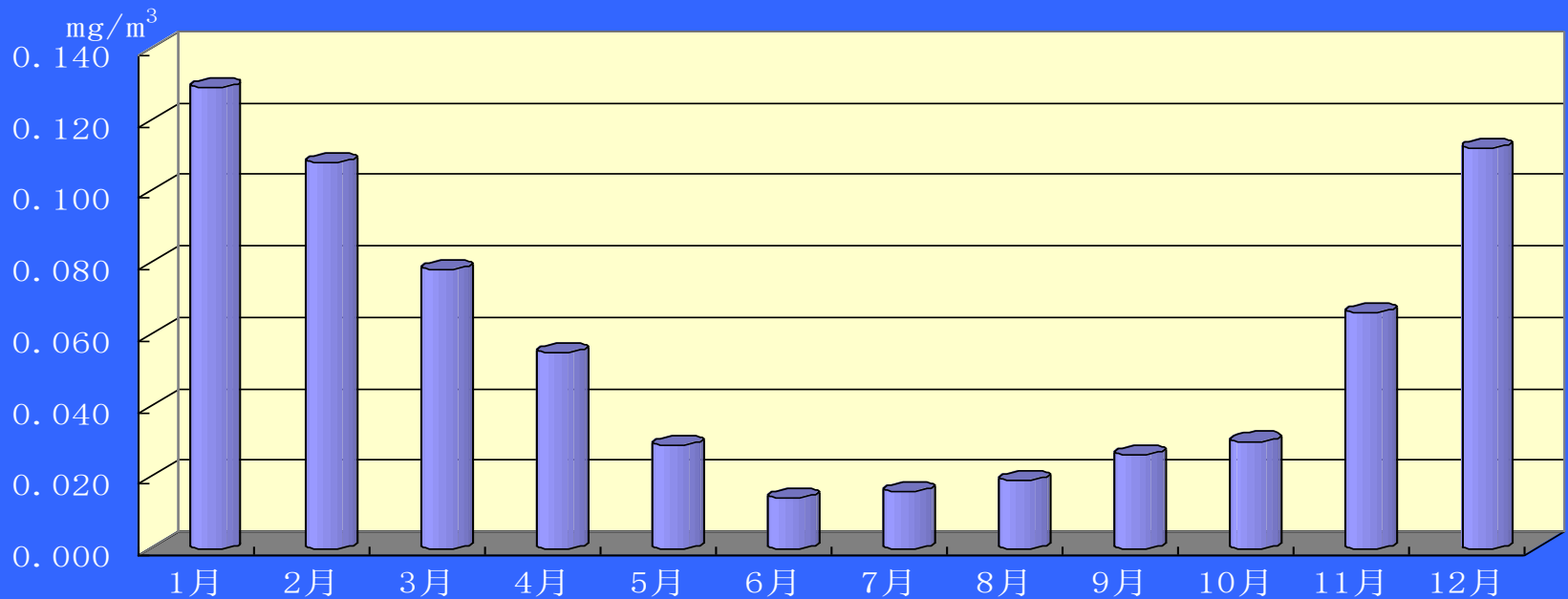
The annual mean value of SO₂ is near to the limited value of National Air Quality Standard for Grade II



空气质量问题 Air Quality Problem

- 采暖期SO₂污染比较严重。
SO₂ pollution is serious in winter.

2005年青岛市区二氧化硫月均值变化



Monthly variation of SO₂ concentration, 2005

SO2 排放现状

Present Status of SO2 Emission

- 2005年全市SO2排放量统计
Annual emission of SO2 in 2005

单位：万吨 Unit: 10 thousand ton

类别 Type	燃煤量 Coal Consumption	燃油量 Oil Consumption	二氧化硫排放量 SO2 Emission
电力 Power Plant	575.4		8.77
非电力 Industries and Heating	304.4	16.66	3.19
生活及其它 Household Heating & Others	135.1		3.19
合计	1014.9	16.66	15.15

2010年SO₂减排目标

Objectives of SO₂ Emission in 2010

- 2010年，全市SO₂排放量控制在11.45万吨以内，比十五末削减26%

In 2010, SO₂ total Emission in Qingdao Area should be less than 114.5 thousand tons, with 26 % reduction rate.

主要减排措施 Key Measures

- 能源结构调整 Energy Structure Improvement
- 工业布局与产业结构调整
Industrial Location & Industrial Sector Adjustment
- 提高区域集中供热水平
District Heating Enhancement
- 燃煤设施脱硫 Desulfurization of Coal Boilers
- 淘汰燃煤锅炉 Shutdown of Small Coal Boilers
- 控制燃煤含硫量 Control of Sulfur Content of Coal
- 加强监督管理
Supervision & Manegement Enhancement

能源结构调整 Energy Structure Improvement

- 电力引进 Introducing more electricity from other areas
 - 建设输变电工程，总规模7360MVA
Extension project of electricity transfer, total scale 7360 MVA
- 加快天然气的引进和使用 Introducing more natural gas
 - 新增天然气用户14万户，新增天然气用量为1184.4万m³/年
Introducing more natural gas - 1.18 million m³/a, to serve 140,000 new households

能源结构调整 Energy Structure Improvement

■ 清洁能源利用 Clean Energy

- 积极推进地热、海水热源、风能、太阳能、生物质能等可再生能源的开发利用。

Expand renewable energy capacity, i.e. Heat pump, wind energy, solar energy, biofuel...

➤ 重点建设项目 Key Projects:

- 建设即墨风力发电项目，装机总容量48万千瓦，每年发电约8亿度，节约38.4万吨标准煤。

Jimo Wind Generation Project, total capacity 480MW, 0.8GWh/year, saving coal 384,000t.

- 推广海水源热泵技术应用。建设海水源热泵项目1个(海天)，提供90万平方米的供热、供冷和热水供应。

Haitian Sea Water Heat Pump Project, providing distric heating, cooling and domestic hot water for 900,000 square meters.

工业布局与产业结构调整

Industrial Location & Industrial Sector Adjustment

- 调整城市工业布局，新建排放大气污染物项目向环境容量剩余较大的工业园区集中，将老城区污染型工业及其他混杂于商住区的污染企业迁至工业园区。

Industrial location adjustment

- New polluting companies will be located in industrial zones with enough environmental capacity
- Relocation of polluting industries from the old downtown area

- 调整产业结构，限制重污染企业生产规模。

Industrial sector adjustment—Restrictions of heavy polluting sectors

- 发展循环经济、推行清洁生产和ISO14000环境管理体系认证。

Developing the recycle-oriented economy, clean production

Encourage ISO14000 certifications

区域集中供热 District Heating

- 市区新建扩建14个热电联产项目、7个供热站项目，新增供热面积8029万平方米。

14 new and expanding projects of cogeneration thermoelectricity plants, 7 district heating projects will be constructed, expansion construction area with district heating will be 80 million square meters

- 市区集中供热普及率由2005年的37.5%提高到2010年的72.8%

In 2010, the district heating rate will be up to 72.8% from 37.5% of 2005

燃煤设施脱硫 Desulfurization

■ 电厂脱硫 Power Plant

黄岛发电厂扩建后规模1925MW，青岛发电厂扩建后规模1200MW，在扩建的同时，新、老机组全部安装脱硫设备,脱硫率90%

Expansion of Huangdao Power Plant, total capacity 1925MW

Expansion of Qingdao Power Plant, total capacity 1200MW

The desulfurization facilities will be installed in all the boilers, desulfurization efficiency 90%

■ 其他锅炉脱硫 Other Boilers

市区所有20吨以上锅炉必须装脱硫设施，已有锅炉脱硫效率要求达到80%以上，新建要求在85%以上

The desulfurization facilities will be installed in all other boilers with the capacity more than 20t/h in urban area,

Desulfurization efficiency 80% for old boilers, desulfurization efficiency 85% for new boilers

淘汰燃煤锅炉

Shutdown of Small Coal-burning Boilers

- 淘汰市内七区城市建成区供热规划范围内所有非集中供热燃煤锅炉

In the planning areas of district heating, shut down all non-DH (district heating) coal boilers

- 淘汰非集中供热规划范围内所有6吨/时以下和使用10年以上15吨/时以下的燃煤锅炉

In other areas, shut down all boilers less than 6t/h and boilers less than 15t/h and older than 10 years

控制燃煤含硫量

Control of Sulfur Content of Coal

- 对未建脱硫设施且SO₂超过排放标准或者总量控制指标的，
燃用煤炭含硫量必须控制在0.7%以下。

For the boilers without desulphurization facilities, sulfur content of coal should be less than 0.7%.

加强监督管理

Supervision & Management Enhancement

- 扩大“高污染燃料禁燃区”范围 Expansion of “High polluting fuel forbidden area”
- 总量控制与排污许可证 Total emission control and Discharge permission
- 烟气在线监测 CEMS installation and supervision



实现减排目标面临的主要困难 Challenges & Difficulties

- 经济政策 Economic Policy Instruments
- 法律法规 Regulation on Pollution Control
- 资金筹措 Fund Collection for Industries
- 治理技术 Available Technologies
- 管理能力 Management Capacity of EPB

谢谢!

Thank you for your attention

