CAAC

中国清洁空气联盟

Clean Air Alliance of China

Clean Air Management and Assessment Tools

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Secretariat for CAAC

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CAAC Overview

The Launching of CAAC

January 23rd 2013, with support from Energy Foundation, ten institutions jointly initiated the Clean Air Alliance of China (CAAC).

Ten Founding Members:

Chinese Academy for Environmental Planning, Appraisal Center for Environment & Engineering of MEP, Tsinghua University, Nanjing University, Renmin University of China, Beijing Normal University, Chinese Research Academy of Environmental Sciences, Peking University, Fudan University, Vehicle Emission Control Center of MEP

Management Structure

Management and Operation

- CAAC steering committee
- CAAC Advisory Council
- Secretariat for CAAC

Members

- Provinces and cities
- Research institutions
- Others

CAAC Approaches

Support establishing Long-term national strategy

- 2030 China's Clean Air Road Map;
- Suggestions for the revisions of "*Clean Air Act*".

Assist capacity building and local implementation

- Networks of provinces, cities, research institutes, and experts;
- Management tools development and dissemination;
- Capacity building sessions.

Raise awareness and educate the public

- Awareness raising materials and events;
- Platform for NGOs with training schemes.

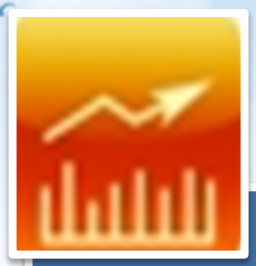
Provinces and Cities Partners

CAAC Clean Air Management Tools

CAAC Tool Overview

- ✓ **Clean Air Management Index System**
- ✓ **Clean Air Measures List**
- ✓ **Co-Control Tool Kit**
- ✓ **Municipal Air Quality Attainment Planning Manual**
  - ➢ Air Emission Inventory Tool
  - ➢ SMAT-CN
  - ➢ Technology and Finance Needs Assessment Tool

Clean Air Management Index System (Provincial and City)



- The Provincial and City Clean Air Management Index System is a comprehensive and systematic tool, which can help provinces and cities to evaluate and analyze the performance, and guide the implementation of improvement activities in the field of air quality management and policies.
  - Comprehensive external evaluation of clean air management;
  - Assist provinces and cities to carry out self-assessment;
  - Evaluation addresses the establishment and improvement of clean air management system;
  - Assess the efforts made by the province and city in the clean air management;
  - Assessment results combined with the province and city's future actions.

Clean Air Management Index System (Provincial)

Clean Air Management Index System (Provincial)

Clean Air Management Index System (Provincial)

Component	Indicator
Air Quality	Average concentration of major pollutants
	Change in pollution levels compared to the previous year
	Percentage above (or below) defined standards
	AQI percentage above defined standards
	Number of days with high-levels of pollution (pollution episode)

Clean Air Management Index System (Provincial)

Clean Air Management Index System (Provincial)

Component	Category	Indicator
Level of Challenges	Meteorological and Geographic Conditions	Pollution Challenge Index
	Industrial Structure	Second to third industry ratio
		Ratio of key pollution industries in GDP
	Energy consumption	Share of Coal in Energy Consumption
		Coal use intensity (per unit area)
		Energy consumption per 10,000 RMB GDP output
	Automobile Emission	Vehicle Population per 100 people
		Average sulfur content of petrol and diesel in consumption

Clean Air Management Index System (Provincial)

Clean Air Management Index System (Provincial)

Component	Category	Indicator
Integrated Management	Management Structure	Leading Mechanism
		Cross-department Management and Coordination Mechanism
		Regional Coordination Mechanism
	Scientific Basis and Emergency	Air emission inventory and source apportionment
		Air Quality Management Planning
		Air pollution forecasting and emergency response system
	Human Resources and Funds	Staff for Air Quality Management
		Government funds on air quality
	Information Disclosure and Evaluation &Review	Monitoring network and data transmission
		Information disclosure
		Review and Evaluation

Clean Air Management Index System-Application

CAAC Clean Air Management Report----Jiangsu Province

This document is an assessment report using CAAC clean air management index system to identify areas for improvement and build up a relatively comprehensive air quality management system with which Jiangsu Province can continuously improve the air quality in their provinces.

CAAC Clean Air Measures

- This List of Clean Air Measures is compiled by CAAC Secretariat with the supports of domestic & international experts and cooperative provinces & cities.

Stationary Sources	Mobile Sources	Transport Control	Integrated Measure	Safeguard Measure	Regulation and Standard
Industrial	Vehicle	Public and non-motorized transportation	Coal control and promotion of clean energy	Organization and evaluation	Regulation and laws
Agricultural and forestry	Off road mobile emissions	Logistics	Industrial structure adjustment	Special fund	Standards
Others		Pricing measures	Integrated planning	R&D and application	Management mechanism and policies
			Capacity building	Information disclosure & public participation	Industry directory

CAAC Clean Air Measures

Name	Source Category	Pollutants	Implement	Cost	Brief Summary
Measure's name	Stationary/Mobile/ Transport Control/ Integrated Measures/ Safeguard Measures/ Regulations and Standards	Target pollutants	Implementation department of the measure	Financial cost	Including objective and control methods

- **Purpose**

Introduce the purpose of the measure.

- **General Description**

Regulatory Context and Background

Emission Reduction Methodology

Emission Reductions

- **Calculation Instruction**

Emission reduction calculation methodology

CAAC Clean Air Measures

Case

- **Background Description**
  Including implementation date, location and industry
- **Emission Reduction**
  Emission reduction numbers of pollutants
- **Co-control Effect**
  CO_2 reduction effect
- **Emission Reduction Trade-offs:**
  If there is any chance would increase the emission of other pollutants may impact the environment.
- **Implementation Department**
  Including duties and responsibilities
- **Implements**
  Including implementation processes and steps
- **Cost**
  Total cost of the full application of the measure
- **Monitoring Mechanisms**
  Including methods of monitoring and quality assurance
- **Sources and References**
  List of relevant documents

Co-Control Tool Kit

C^2

- Keep air pollution control as the main target and GHGs reduction as co-benefits; Accept comparatively higher co-benefits option rather than seek only co-benefits (e.g. Install FGD for SO2 removal)
  - Develop and disseminate co-benefits policy tools to support policy making;
  - Accumulate experience and expertise for policy tools development and upgrades through members and networks;
  - Focus on actions from cities and major industries.

Co-Control Tool Kit

Key Components of the Toolkit

- ✧ list of co-control measures;
- ✧ the cost curve of co-control technologies;
- ✧ Cost-benefit analysis methodologies;
- ✧ Co-control industrial guidance for major industries.

Technical Partners:

Beijing Normal University, Shenzhen Research Academy of Environmental Sciences, Nanjing University, and LBNL Laboratory of the United States

City Pilots: Urumqi, Suzhou, Shenzhen.

Industry Pilots: Cement, Iron and Steel, Thermal Power.

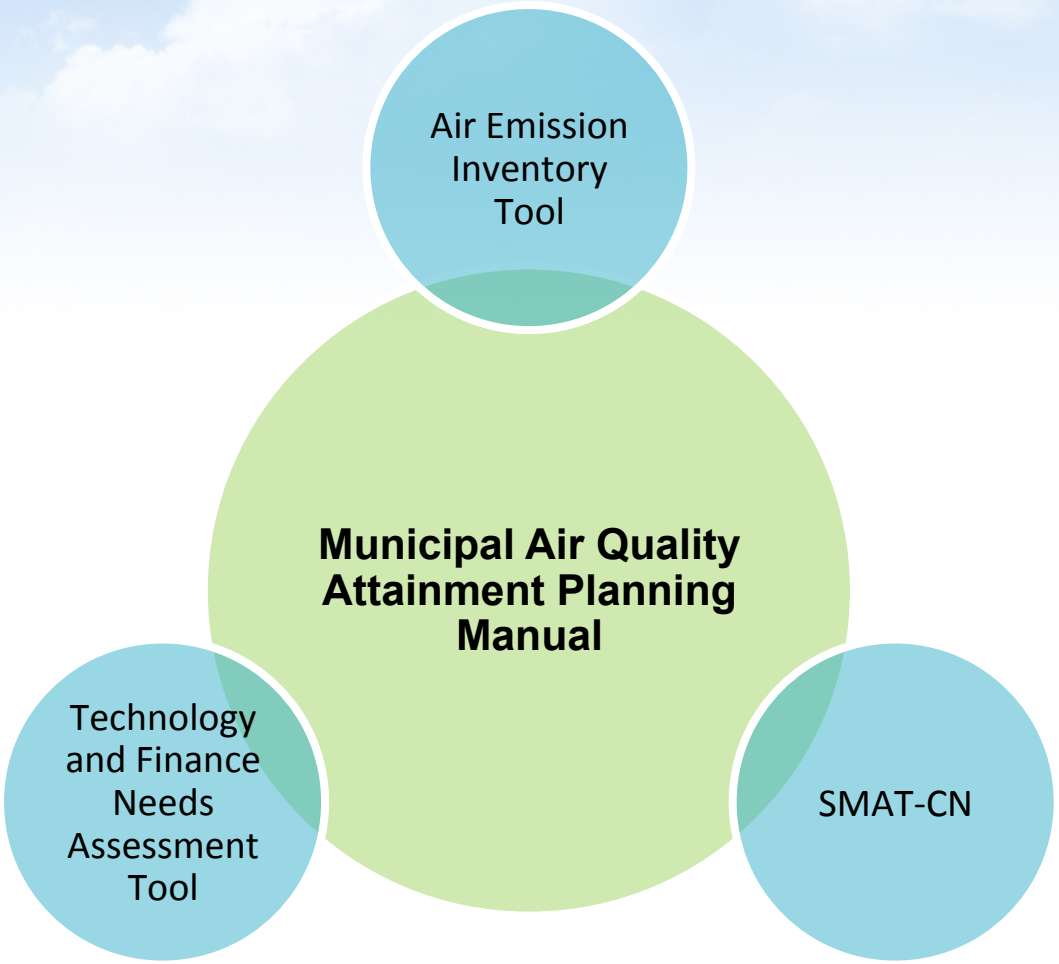
Municipal Air Quality Attainment Planning Manual

- Municipal Air Quality Attainment Planning Manual is developed by CAAC together with China Academy of Environmental Planning, which is designed to provide Chinese city governments with guidance for developing local plans to meet air quality standards.
  - Provide a comprehensive framework for conducting air quality planning;
  - Step-by-step guidance and assessment tools for air quality analysis;
  - Guide the cities to develop their own air quality attainment plan.

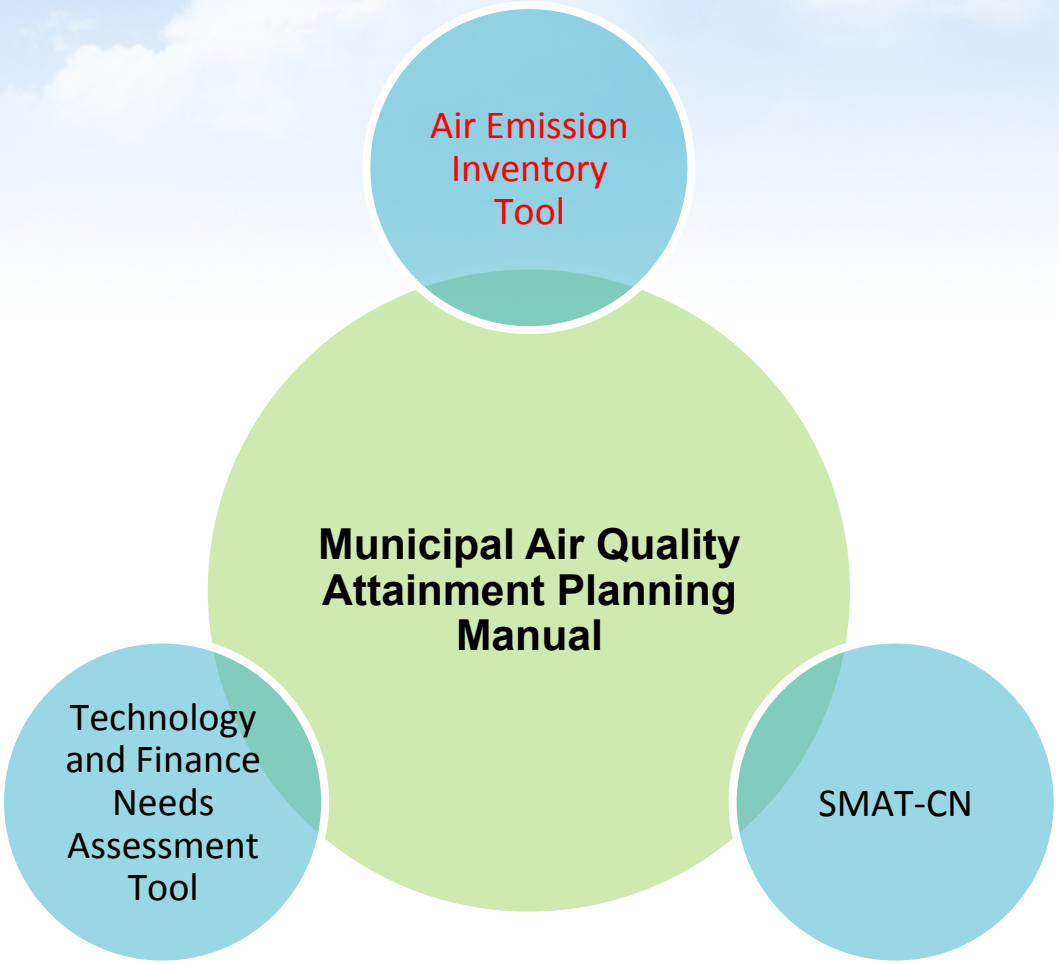
Municipal Air Quality Attainment Planning Manual

Step One	• Setup the teams
Step Two	• Establish A Baseline
Step Three	• Setup Air Quality Attainment Strategy
Step Four	• Objective Identification
Step Five	• Generate Action Plan for Short/Medium Term
Step Six	• Technology and Finance Needs Assessment
Step Seven	• Monitoring and Implementation
Step Eight	• Evaluation and Revision

Attainment Planning Supporting Tools



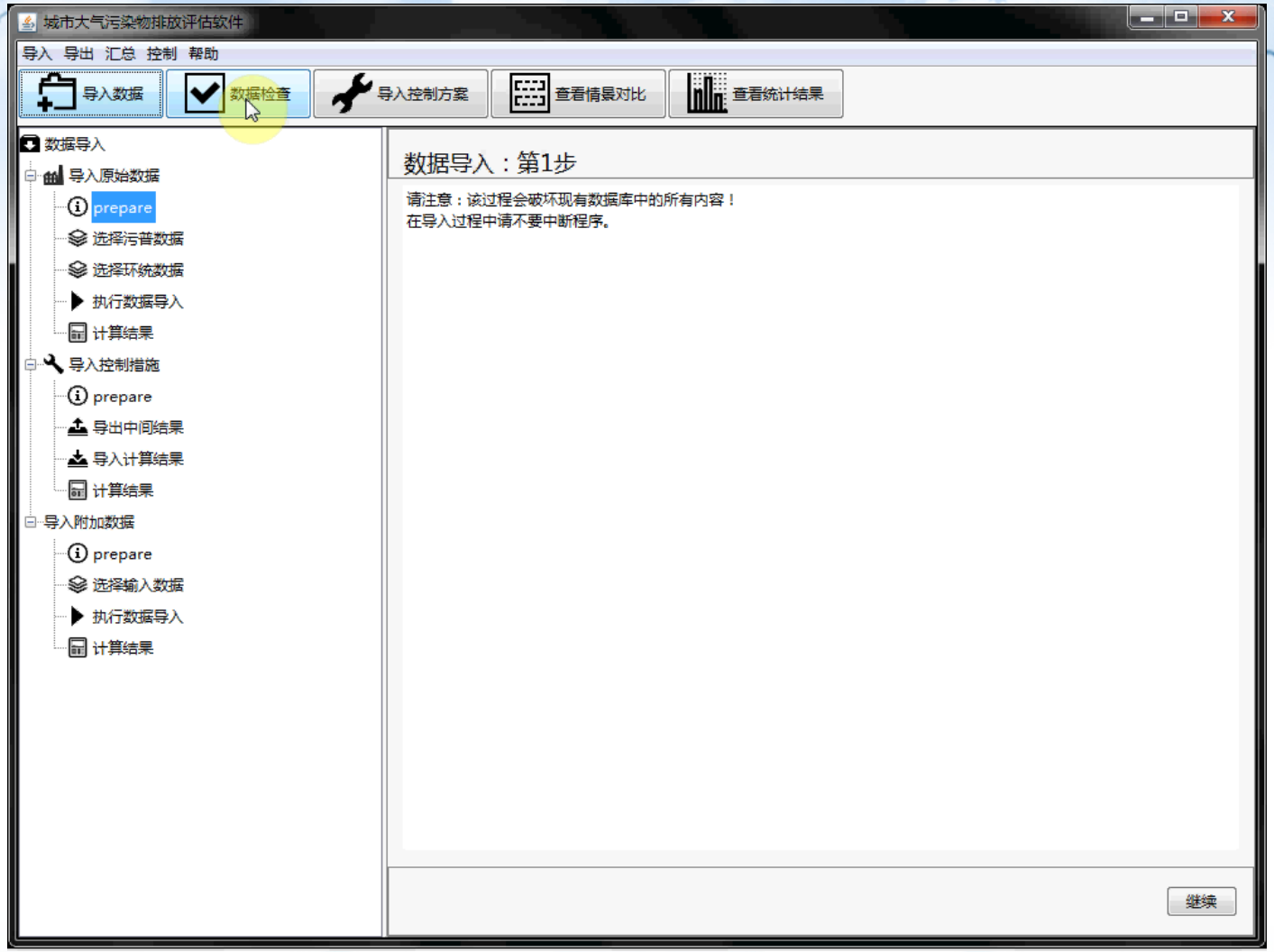
Attainment Planning Supporting Tools



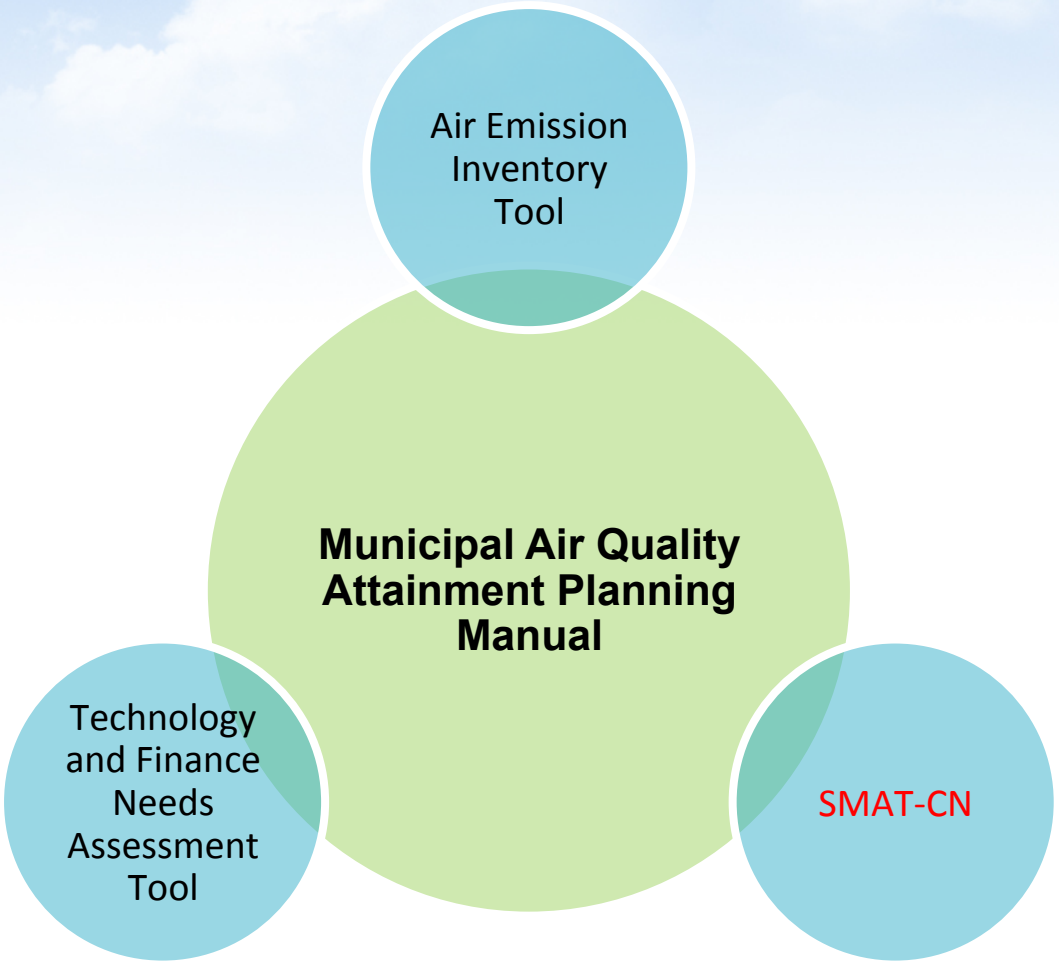
Air Emission Inventory Tool

- Tsinghua University leads the development of the Municipal Air Emission Inventory Tool. The development of the municipal inventory tool is based on the National 863 research of MEIC sources of air pollution emission inventory, which is targeting at national and regional scales.
  - Applied as air emission inventory software;
  - Support the establishment of air emission inventory at city level;
  - Use data from existing statistics system as data inputs;
  - The output can be directly used in model analysis.

Air Emission Inventory Tool



Attainment Planning Supporting Tools

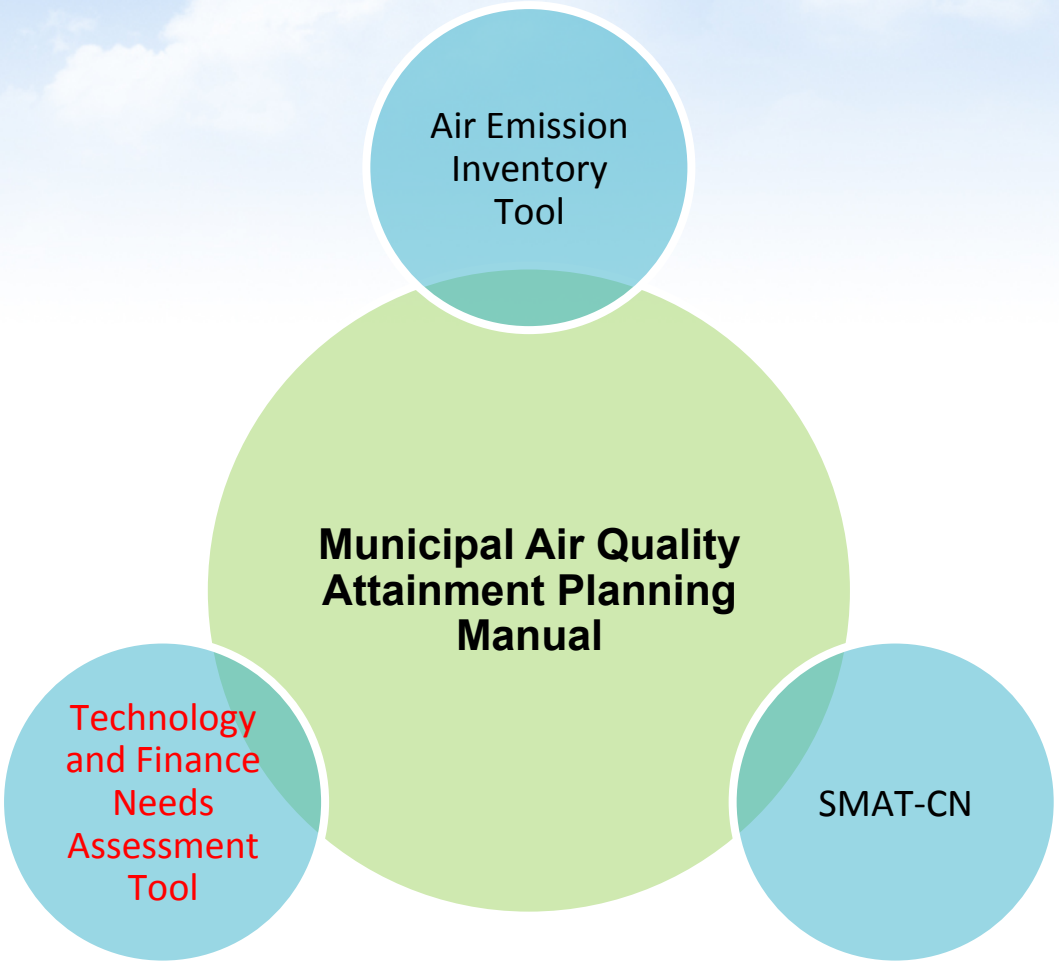


Software of Model Attainment Test for China (SMAT-China)

- SMAT-China is based on advanced air quality attainment assessment principles and methodology from US EPA. The software can use monitoring data to model the ambient air quality, and forecast the air quality under the different pollution control scenarios, which can be applied to support the air quality attainment work in China.
  - Covers the key pollutants in the latest “Ambient Air Quality Standard”;
  - The results includes the decrease of pollutants in monitoring station and can be interpreted as spatial distribution of pollutants according to monitoring data and simulation results;
  - The results can be exported and demonstrated as GIS, professional graphics, and data statistics to achieve rapid visualization analysis and display.

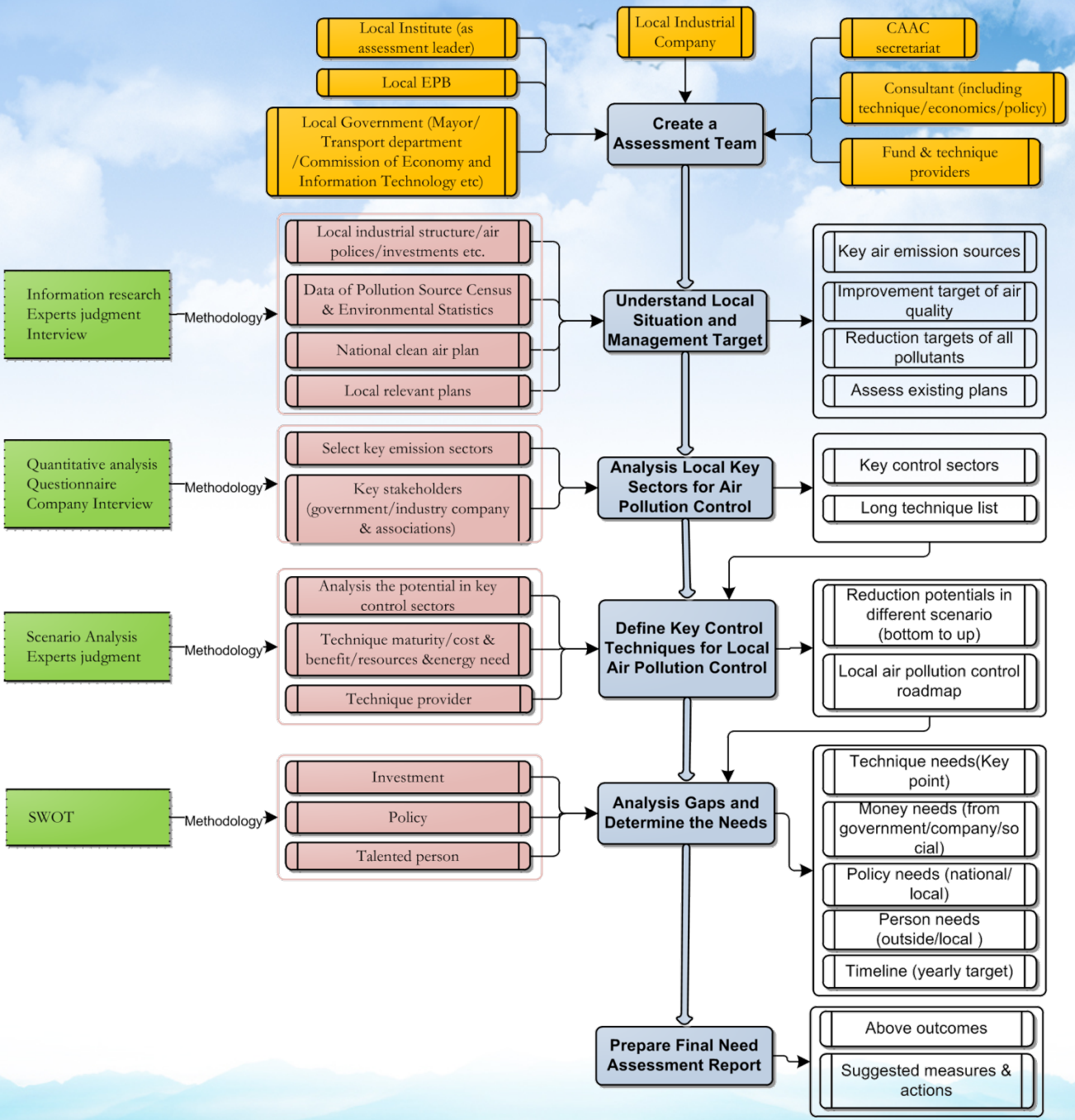
Software of Model Attainment Test for China (SMAT-China)

Attainment Planning Supporting Tools



Technology and Finance Needs Assessment Tool

- Technology and Finance Needs Assessment Tool is one innovative tool for municipal air quality planning. It is designed to analyze and evaluate the technical and financial needs for cities to achieve the planned air quality management targets, and delivers scientific basis for compiling on-the-ground action plans.
  - Assessment could be carried out based on existing air quality improvement plan or new plans;
  - Covers industry, mobile, and alternative energy sources;
  - Address the needs of technology, finance, enabling policies and human resources;
  - Integrate both top-down and bottom-up approaches with deep involvement of business partners.


Local Institute (as assessment leader)
Local EPB
Local Government (Mayor/ Transport department /Commission of Economy and Information Technology etc)
Local Industrial Company
Create a Assessment Team
CAAC secretariat
Consultant (including technique/economics/policy)
Fund & technique providers
Information research
Experts judgment
Interview
Methodology
Local industrial structure/air polices/investments etc.
Data of Pollution Source Census & Environmental Statistics
National clean air plan
Local relevant plans
Understand Local Situation and Management Target
Key air emission sources
Improvement target of air quality
Reduction targets of all pollutants
Assess existing plans
Quantitative analysis
Questionnaire
Company Interview
Methodology
Select key emission sectors
Key stakeholders (government/industry company & associations)
Analysis Local Key Sectors for Air Pollution Control
Key control sectors
Long technique list
Scenario Analysis
Experts judgment
Methodology
Analysis the potential in key control sectors
Technique maturity/cost & benefit/resources &energy need
Technique provider
Define Key Control Techniques for Local Air Pollution Control
Reduction potentials in different scenario (bottom to up)
Local air pollution control roadmap
SWOT
Methodology
Investment
Policy
Talented person
Analysis Gaps and Determine the Needs
Technique needs(Key point)
Money needs (from government/company/social)
Policy needs (national/ local)
Person needs (outside/local)
Timeline (yearly target)
Prepare Final Need Assessment Report
Above outcomes
Suggested measures & actions

Thank You!

Question?

Contact Us

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