The background of the slide features a landscape of misty, blue-toned mountains. The top portion of the slide is a solid blue horizontal band. The text is centered and presented in a clean, white, sans-serif font.

# **Beijing's Clean Air Actions During 2013-2017**

**Zhang Feng**  
**Beijing Municipal Ecology and Environmental Bureau**  
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# Contents

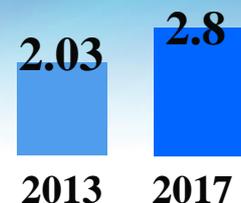
**1. Air Quality Improved Significantly**

**2. Major Measures**

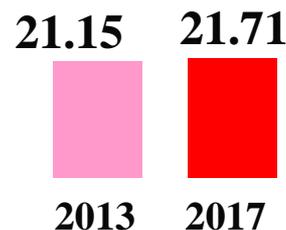
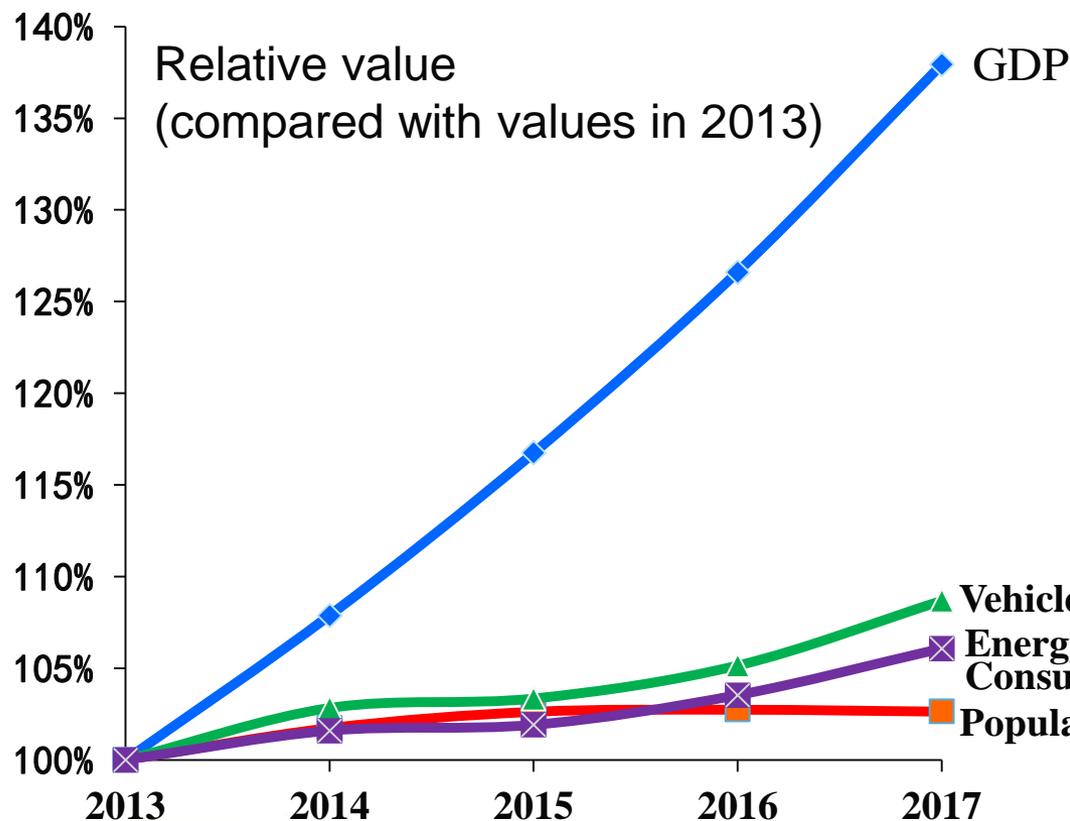
**3. Lessons and Experience Learned**

# 1 Air Quality Improved Significantly

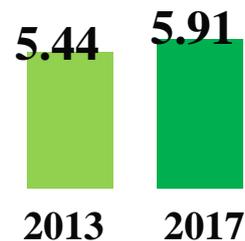
Background: rapid and healthy economical social development



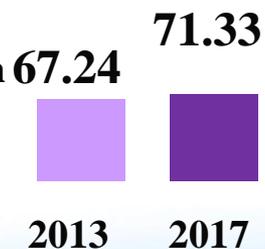
**GDP**  
(trillion Yuan)  
37.9% increase



**Population**  
(million)  
2.6% increase



**Vehicles**  
(million)  
8.7% increase

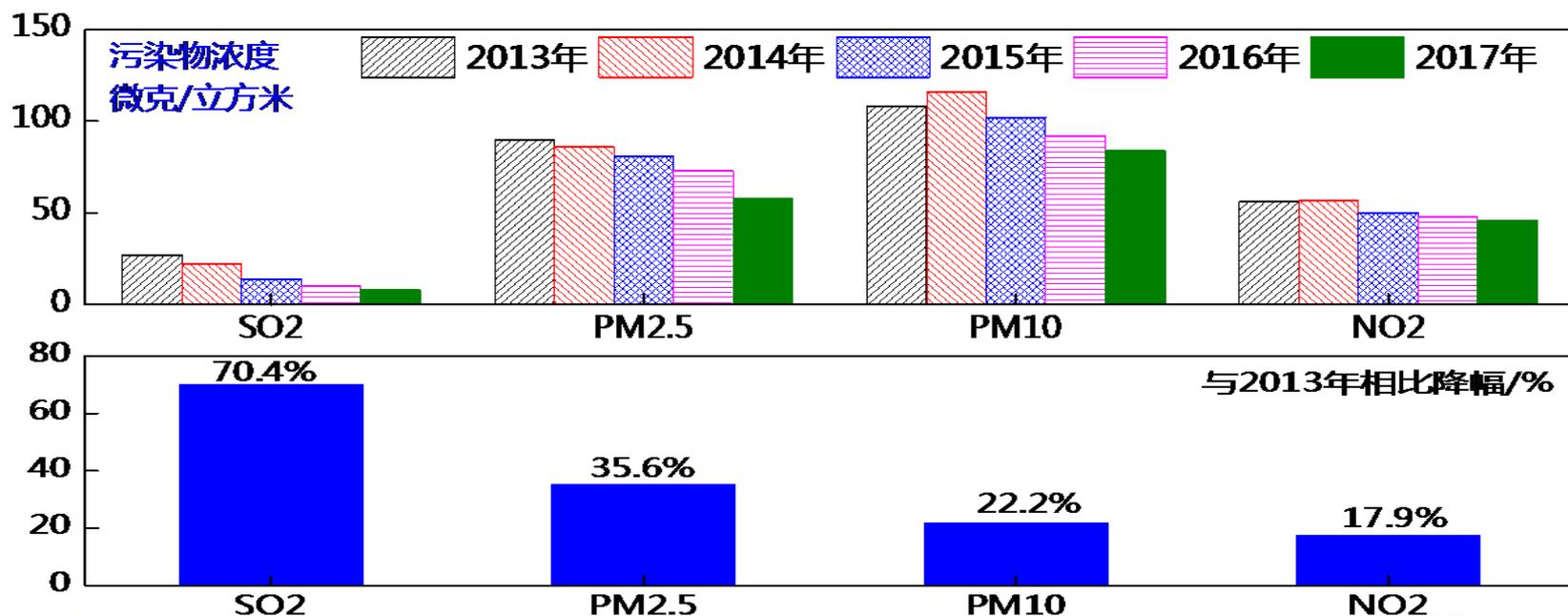


**Energy Consumption**  
(million tons of coal)  
6% increase

# 1 Air Quality Improved Significantly

In 2017, the annual average concentration of SO<sub>2</sub>, NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> reduced to was 8, 46, 84 and 58 μg/m<sup>3</sup> respectively, reduced by 70.4%, 17.9%, 22.2% and 34.8% compared with 2013.

Specially, the annual average concentration of SO<sub>2</sub> in 2017 approached the average level in European cities.



## 2. Major Measures

### Coal-fired Emission Control

Annual coal consumption has dropped from 22.7 million to below 5 million tons, while the proportion of clean and high-qualified energy share increased to more than 90%.

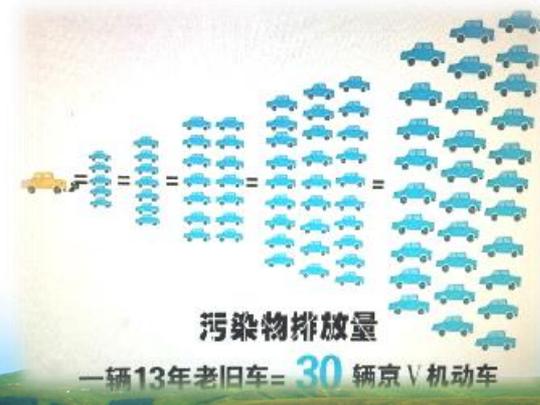
- 4 gas-fired thermal power centers are built to replace 4 coal-fired thermal power plants.
- “Coal-to-clean energy conversion ” conducted in 1829 villages.
- A total of 39,000 tons vapor capacity coal boilers converted clean energy
- 27,000 small coal-fired furnaces were eliminated.
- Low-nitrogen combustion technology applied in a total of 34,000 tons vapor capacity gas-fired boilers.



## 2. Major Measures

### Vehicle Emission Control and Fuel Quality

- ❑ Strict control over increase of vehicle fleet, enforced the China V Emission Standards on new vehicles, applied the Stage Five of China Fuel Quality Standards equal to Euro 5 gasoline Standards;
- ❑ 2,167,000 old polluting yellow-labeled vehicles were eliminated, new energy vehicle fleet grow to 200,000, and 51,000 taxis adopted three-way catalytic converter retrofitting ;
- ❑ High-emission vehicles and non-road machineries are regulated tightly. Low emission zone was indentified, heavy-duty diesel vehicles below the China III Emission Standard are banned within the Sixth-Ring Road.
- ❑ By promoting rail-based public transportation, green transportation accounts 72.1% in total trips models in 2017.



## 2. Major Measures

### Industries Emission Control

- ❑ Implementation of the Catalog for the Banning and Restricting Setting New Industrial Plants and process;
- ❑ the Catalog for Eliminating and Adjusting Polluting Industrial Process, **1992** old polluting factories were closed or relocated, and **11,000** small, poorly managed polluting enterprises are renovated.
- ❑ Technical retrofitting in petrochemical industries achieved **57,000 tons** VOCs emission reduction.

**The proportion of Tertiary industry in GDP reached 82.4%.**



## 2. Major Measures

### Reducing Dust Pollution

- ❑ **Construction dust**, application of new technologies and measures, including tire-washing machine and video monitoring system, improve law enforcement efficiency;
- ❑ **Road dust**, 8,000 trucks for construction soil transportation were retrofitted to be tightly closed to reduce leakage during transportation; new and efficient processes were applied in 88% road cleaning operation in the city.
- ❑ 70,000 hectares of land was afforested.



## 2. Major Measures

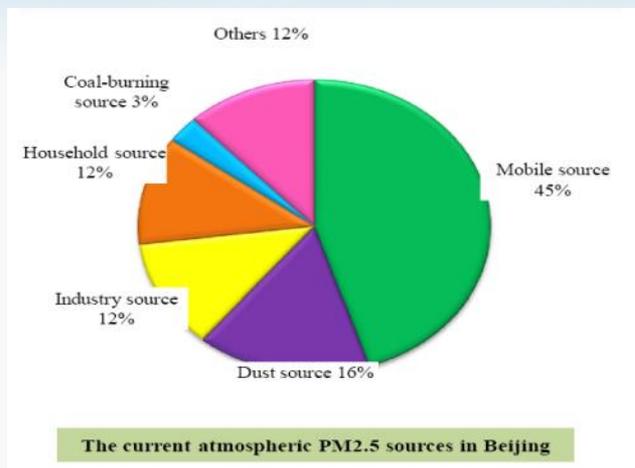
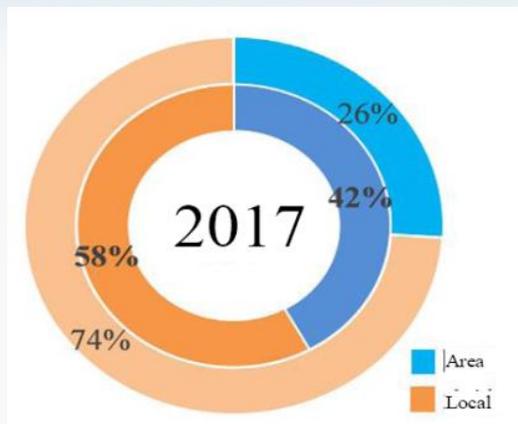
### Heavy Pollution Response

- ❑ An heavy pollution response system was built within the city government with detailed action plan published since 2013;
- ❑ a four-level warning system for heavy pollution episodes was developed: red , orange, yellow and blue, corresponding measures healthy protection and pollution mitigation measures clearly specified;
- ❑ Pollution forecast published in advance after regional consultation;
- ❑ Great efforts made to supervise implementation of the heavy pollution response action plan;
- ❑ Information released in a timely manner to give right guidance for the public.



# 3. Experience and Lessons Learned

Strong scientific support, including PM<sub>2.5</sub> Source Apportionment



Latest study shows: Beijing local emissions contribute 2/3 of total PM<sub>2.5</sub> in the air, while **regional transmission accounts for 1/3**;

Local PM<sub>2.5</sub> sources in Beijing are: PM<sub>2.5</sub> resulting from mobile sources, **dust source, industrial source, household source, and coal-burning source, they contribute 45%, 16%, 12%, 12%, and 3%, respectively**; PM<sub>2.5</sub> resulting from agricultural and natural source, etc accounts for about 12%.

# 3. Experience and Lessons Learned

## Laws, Regulations, Standards, & Policies

- Economic incentive policies: 70 categories of economic policies, including subsidies for implementation of pollution control measure, coal to gas or electricity conversion, low NOx emission retrofitting, scrapping old polluting vehicles, etc.
- Laws and regulations: Beijing's Local Air Pollution Prevention and Control Law raised many concrete rules on pollution control requirement and violation.
- 44 local air pollutants emission standards more stringent than national standards, covering boiler, petrochemical, automobile and other.



# 3. Experience and Lessons Learned

## Key: Regional Collaboration

- A regional cooperation mechanism has been set up under the leadership of central government, cover Beijing and the surrounding cities and provinces, with key ministries involved.
- New vehicle emission standard and National Special Emission Limits on Air Pollutant for six important industries and coal-fired boilers; coordination on increases supply of natural gas and high-quality coal to the region.
- Unified actions were taken for heavy pollution episode response, including pollution forecast and announcement.



***Thanks!***

