

From Milestones to Momentum: Reflecting on PRC's Clean Air Journey and Future Pathways

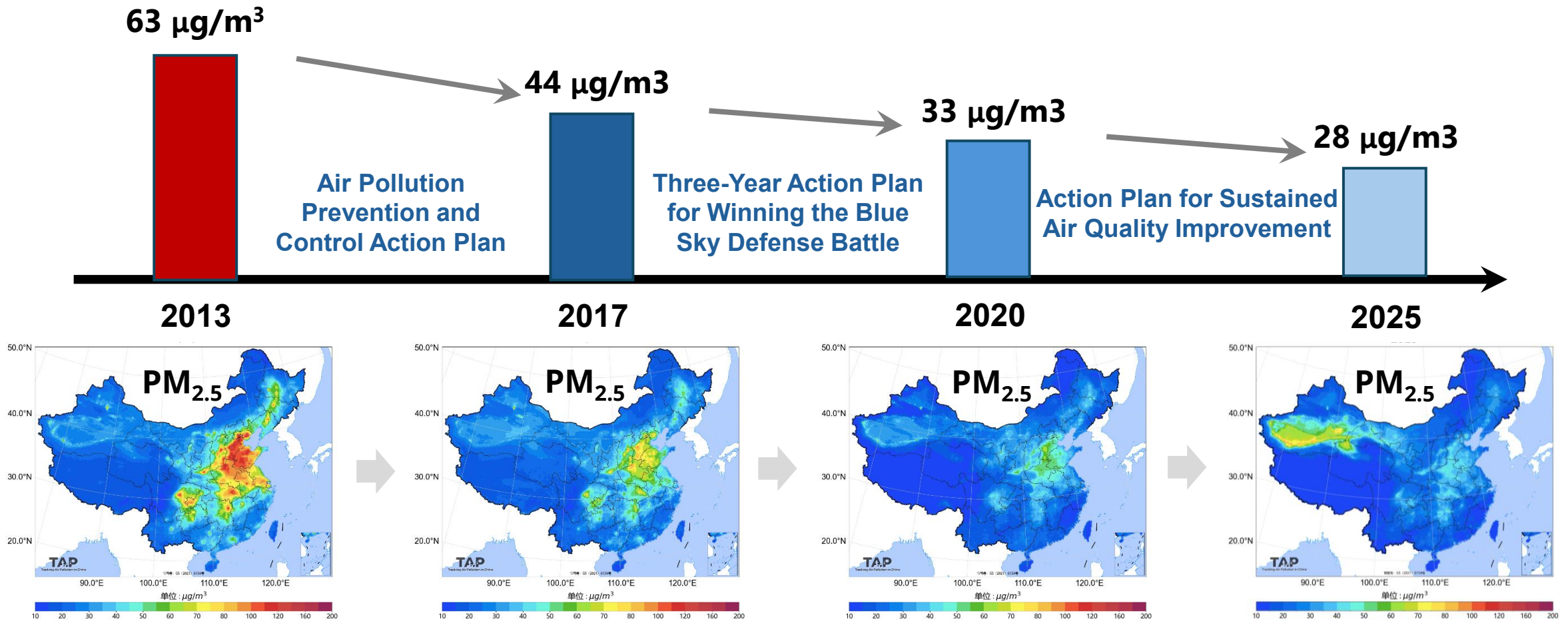
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Bangkok, Mar 11, 2026

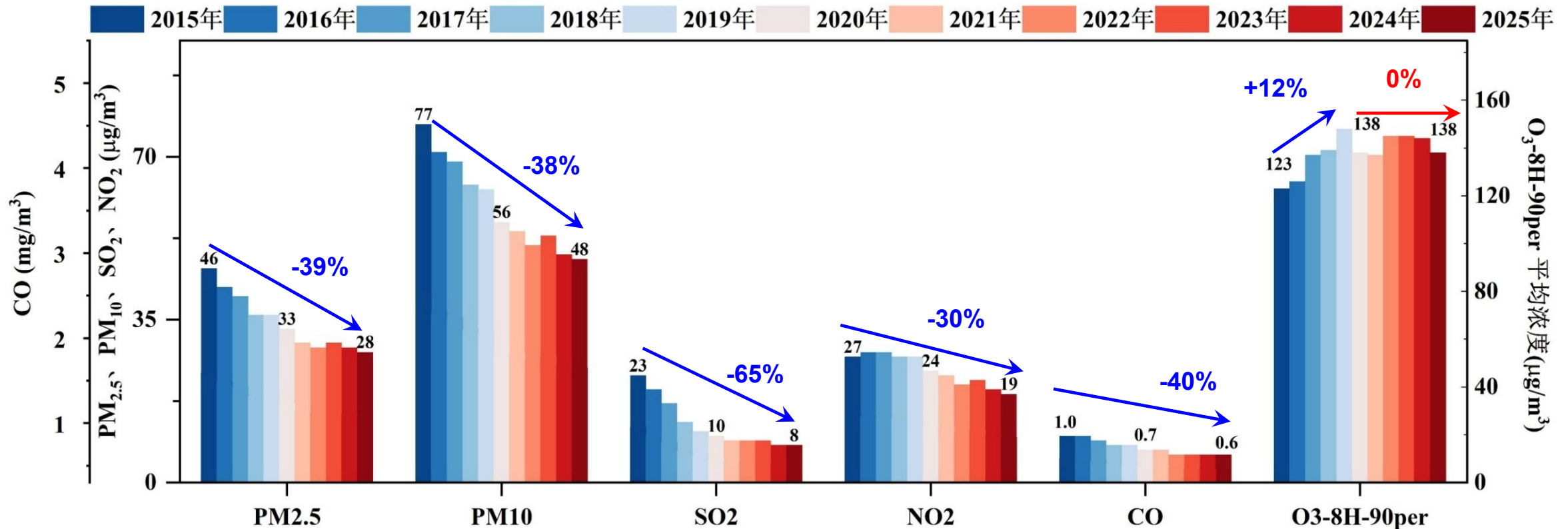


PRC has launched three phases of Clean Air Actions



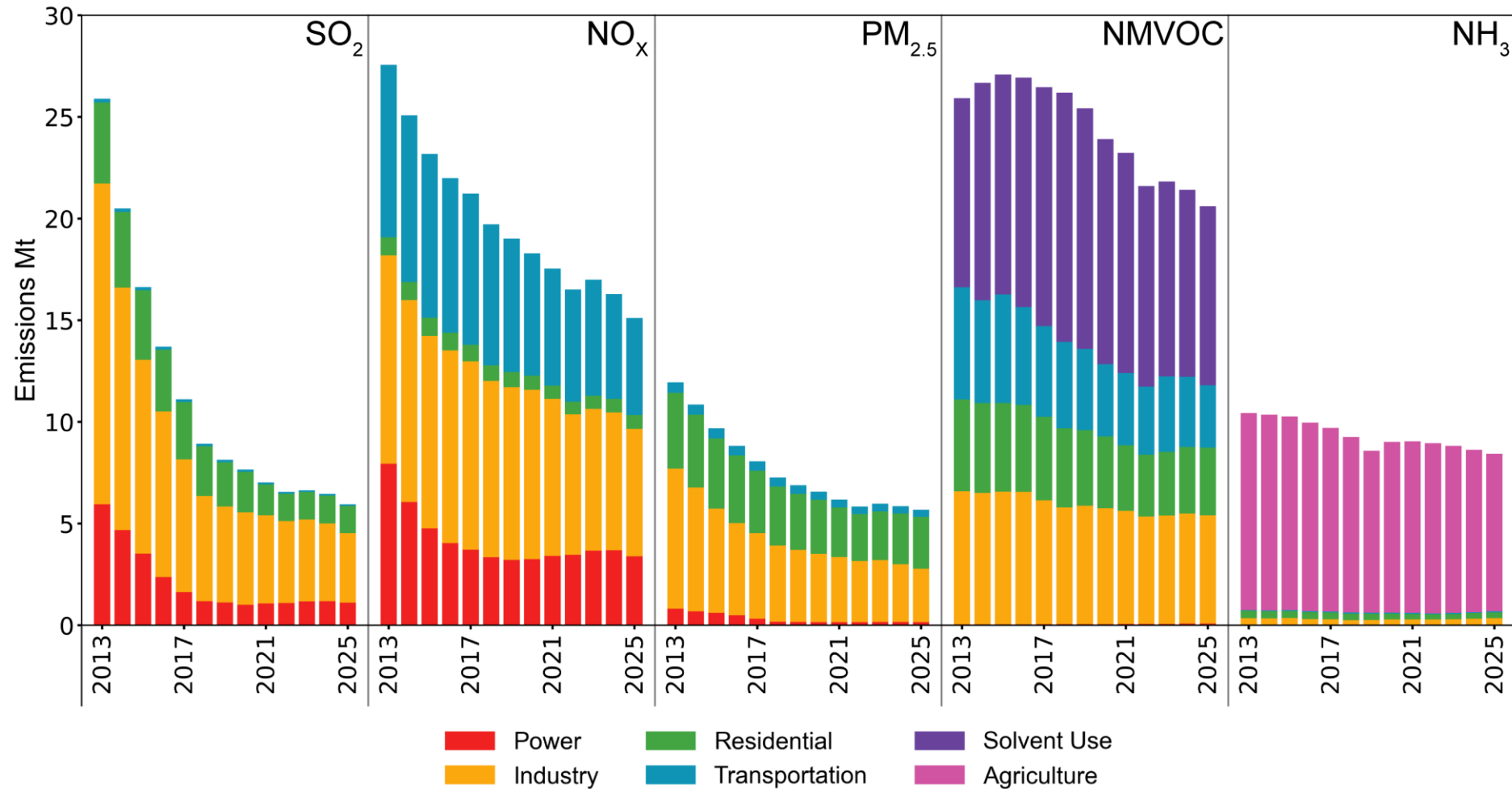
Source: <http://tapdata.org.cn/>

Significant improvements in air quality in PRC



- Concentrations of the five major air pollutants have continued to decline;
- Ozone initially showed a slight increase but has stabilized with modest fluctuations in recent years.

Trends in major air pollutant emissions

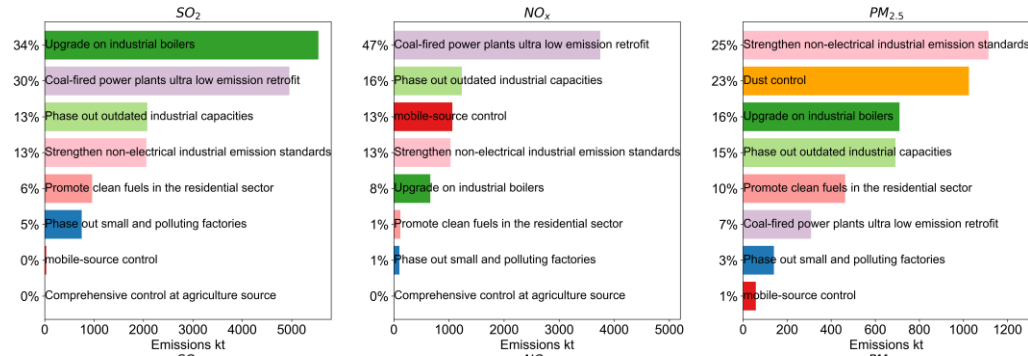


Major clean air measures implemented 2013-2025

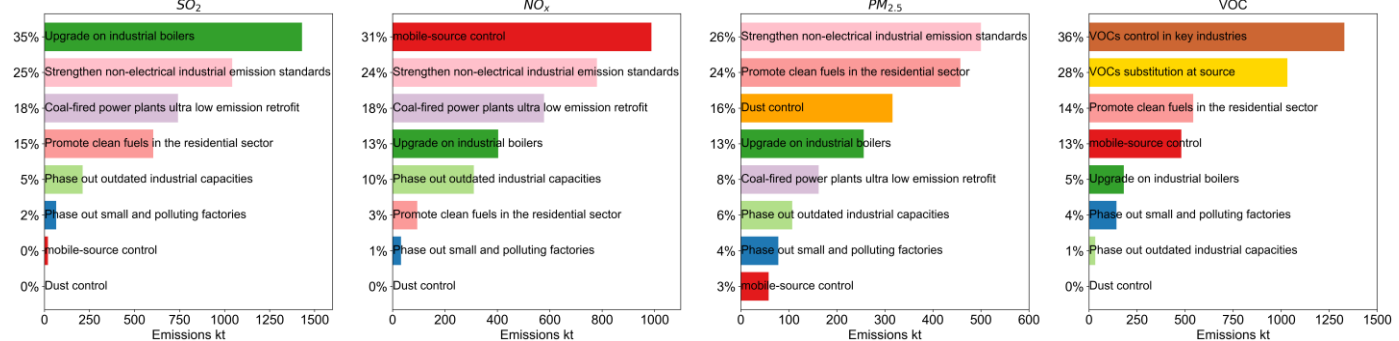
Measure	Details
Phase out outdated industrial capacities	Phased out outdated capacity, including 0.32 billion tons of iron and steel, 0.39 billion tons of cement, 0.16 billion weight cases of flat glass, 45 GW of coal power, over 120 million tons of sintering, and over 68 million tons of coking capacity.
Phase out small and polluting factories	Rectified or closed 422 thousand small, unlicensed, and highly polluting factories.
Coal-fired power plants ultra low emission retrofit	Completed ultra-low-emission retrofits for 1,130 GW of coal power units by 2025.
Strengthen non-electrical industrial emission standards	Completed ultra-low-emission retrofits for 0.99 billion tons of crude steel capacity, 0.38 billion tons of coking capacity, and 0.47 billion tons of cement clinker capacity by 2025.
Upgrade on industrial boilers	Eliminated or upgraded 0.34 million coal-fired boilers
Promote clean fuels in the residential sector	Expanded residential clean energy use to about 41 million households.
mobile-source control	Implemented the China VI standard nationwide and eliminated about 56 million old vehicles.
Dust control	Strengthened dust control at construction sites, roads, and bare land; 230 construction dust control projects were completed.
VOCs substitution at source	Promoted substitution of high-VOC products with low- or zero-VOC materials.
VOCs control in key industries	Completed 50 thousand VOC treatment projects
Comprehensive control at agriculture source	Expanded soil testing and formula fertilization to 133 million ha and green prevention and control to over 53 million ha.

Measure-specific emission reduction in each phase

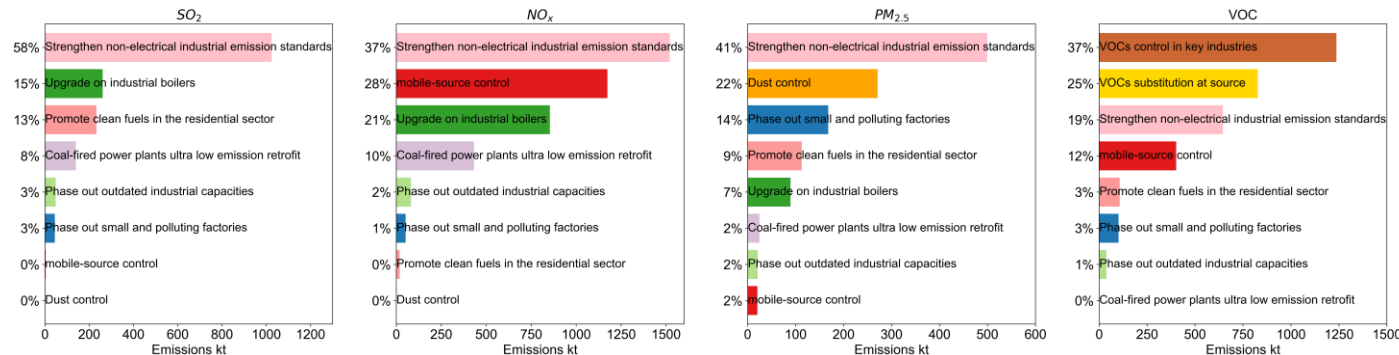
2013-2017



2018-2020



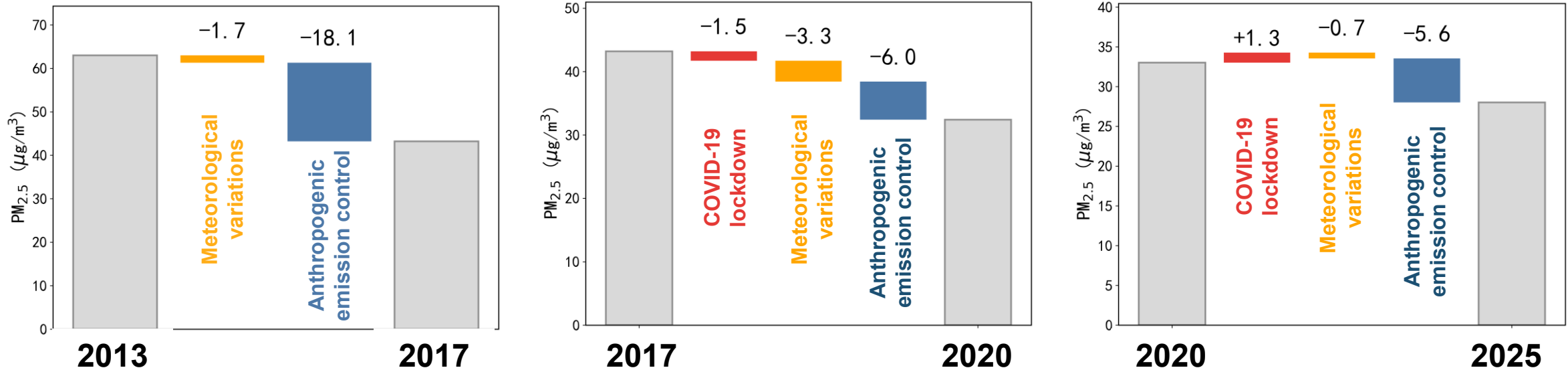
2021-2025



Key measures:

- Upgrade on industrial boilers
- Ultra-low emission retrofit in coal-fired power plants
- Upgrade on industrial boilers
- Mobile source control
- Ultra-low emission retrofit in industrial sectors
- VOC control

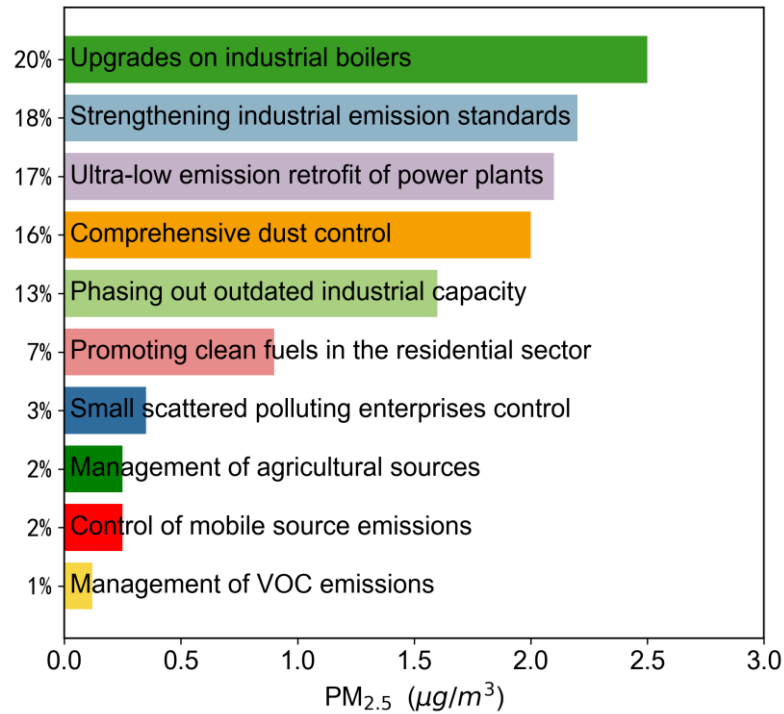
Major drivers underlying PM_{2.5} improvements since 2013



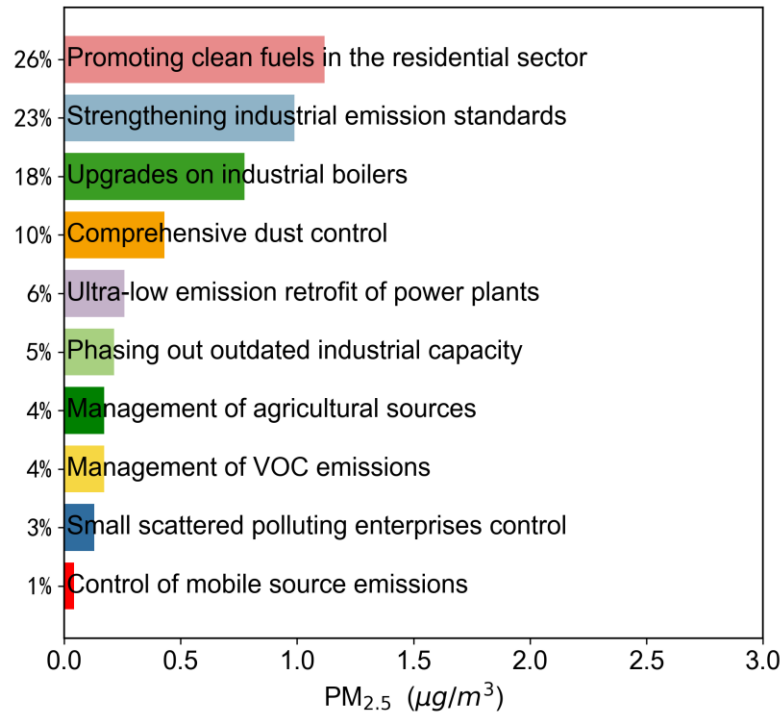
- Although meteorological conditions and COVID-19 lockdown measures also contributed to the improvement in PM_{2.5}, anthropogenic emission reductions have remained the dominant driver of the concentration decline since 2013.

Contributions of different measures to national PM_{2.5} concentration reductions

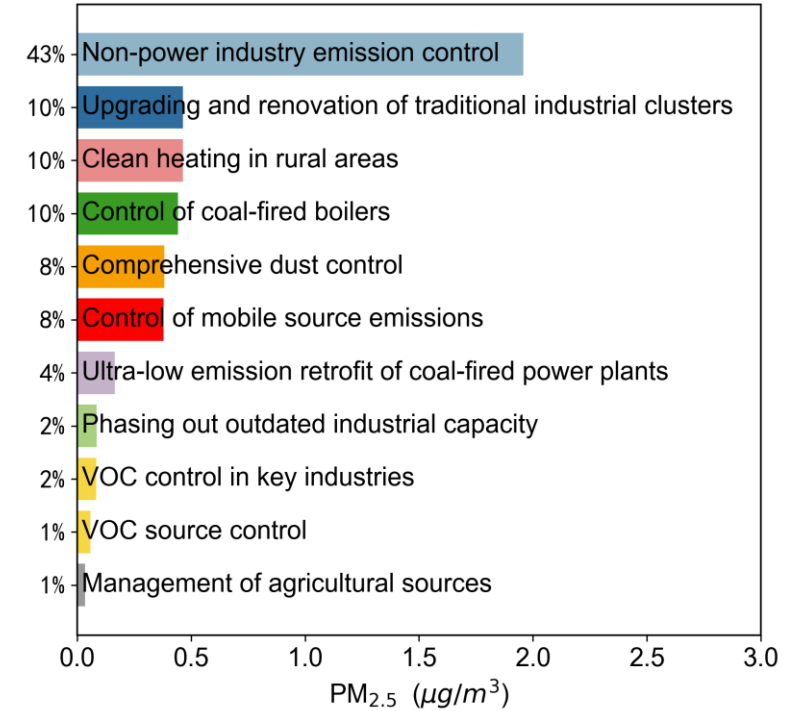
2013-2017



2018-2020



2020-2025



Across the three phases, the most effective measures were upgrades on industrial boilers, promote clean fuels in the residential sector and controls in non-power industrial sectors (iron and steel, cement, coking etc).

New challenge under the upgraded standards

- The Chinese government revised the Ambient Air Quality Standards on February 14, 2026, adjusting the annual average concentration limit for PM_{2.5} from 35 to 25 µg/m³.

Compliance rate of cities with annual PM_{2.5} standards: National and key regions

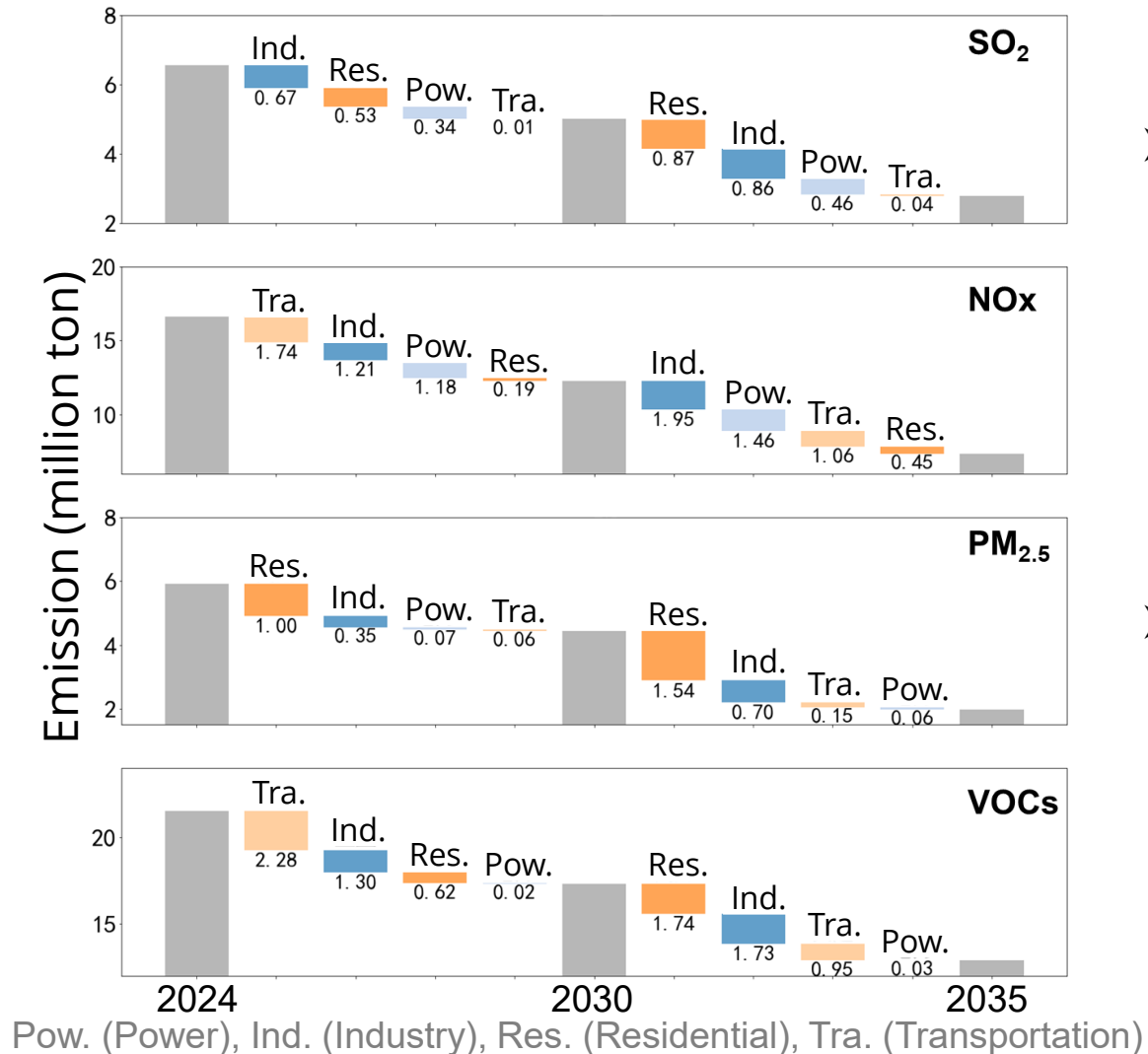
	National	BTH	YRD	FW
Old Air Quality Standards (35µg/m ³)	74% (252/339)	14% (5/36)	71% (22/31)	15% (2/13)
New Air Quality Standards (25µg/m ³)	38% (128/339)	0% (0/36)	10% (3/31)	0% (0/13)

Note: Numbers in parentheses denote compliant/total cities (national or regional).

BTH (Beijing-Tianjing-Hebei and it's surrounding area), YRD (Yangtze River Delta), FW (Fenwei Plain)

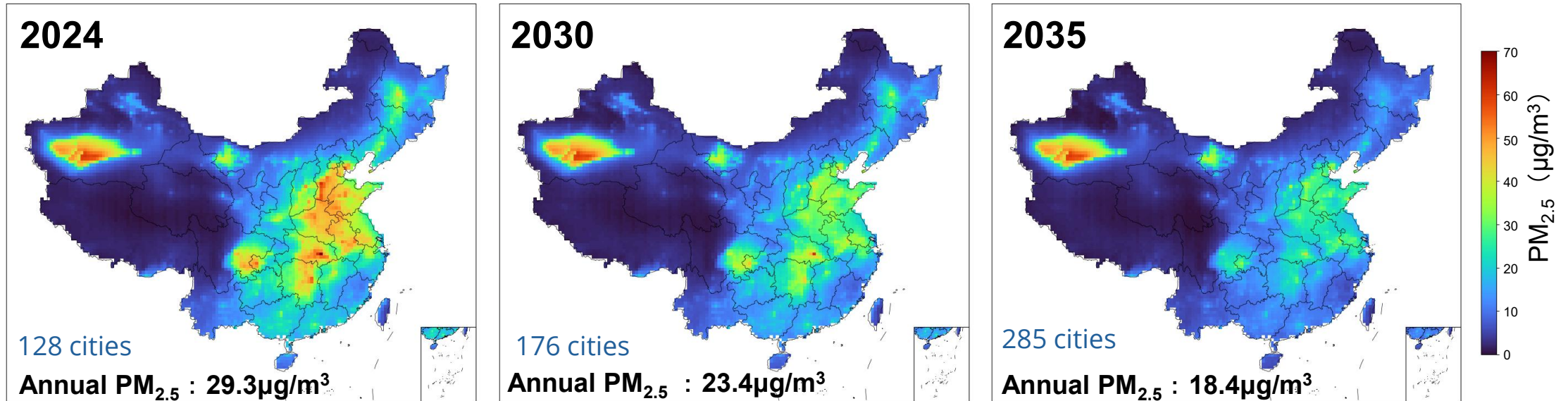
- Under the new standards, only approximately **38%** of cities nationwide are expected to meet the standard, with around **10%** compliance in the YRD, while **no cities** in the BTH and FW regions currently attain this level.

Mitigation efforts undertaken to meet the target



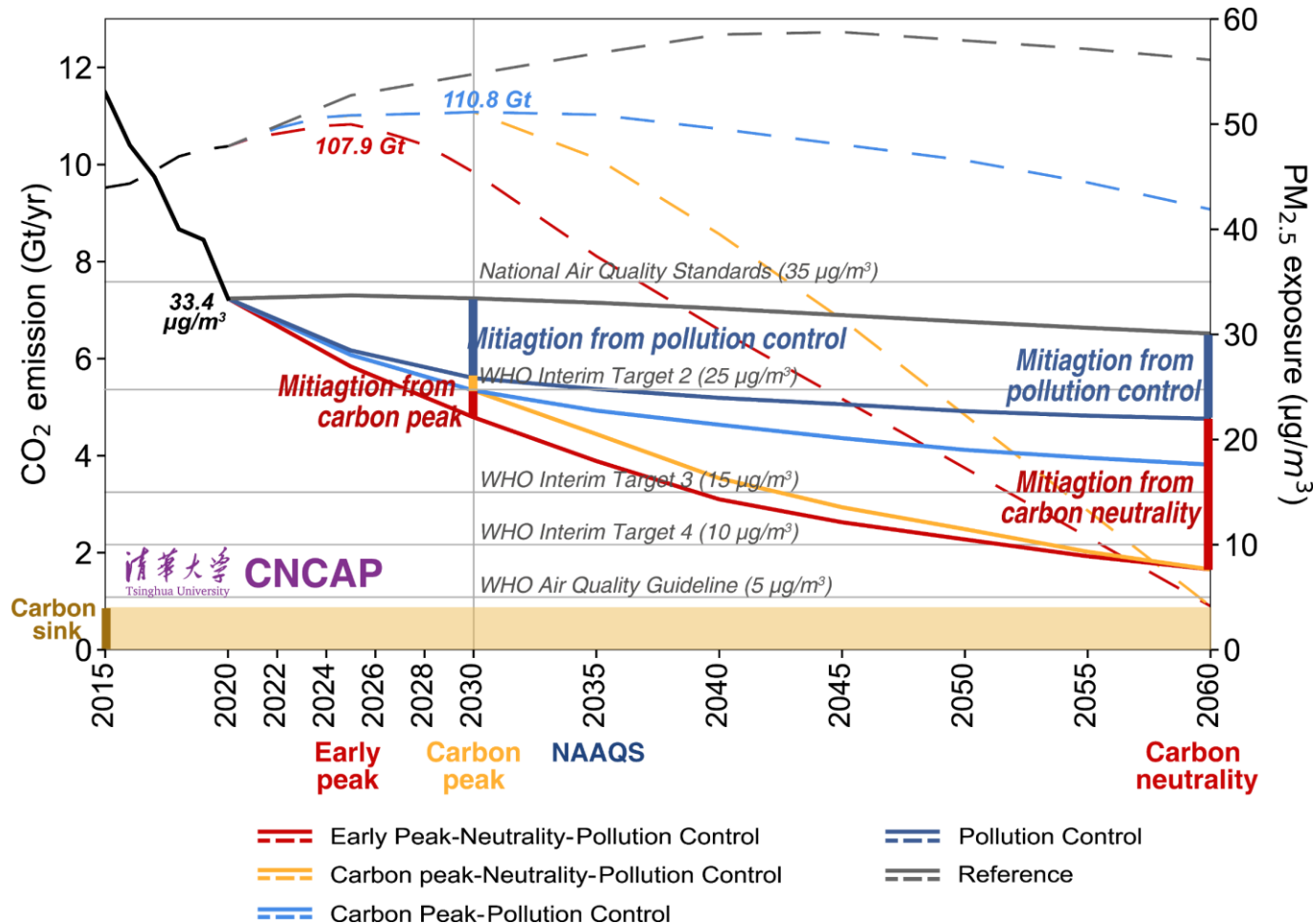
- Before 2030, enhanced implementation of **end-of-pipe control, energy structure adjustment, and energy efficiency improvement** measures targeting the **power, steel, and cement sectors** is required, which ensuring sustained emission reductions in the power and industrial sectors.
- During 2030-2035, intensified **structural adjustments and energy efficiency improvements** across the **power, industrial, and transportation** sectors are required to fully unlock the emission reduction potential of structural measures

Effectiveness of air quality improvements



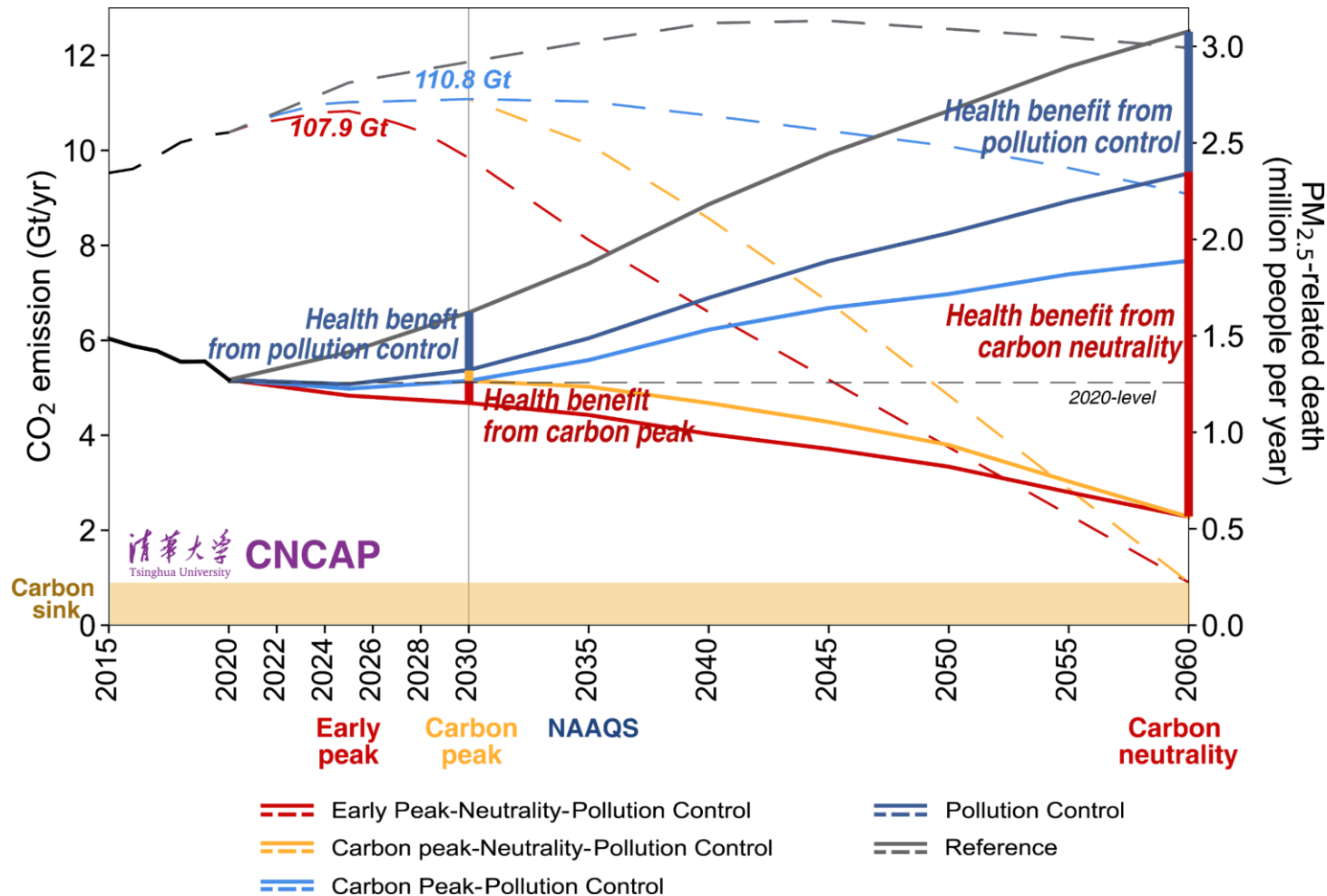
- Under the pathway in which the annual PM_{2.5} concentration in 339 cities nationwide and in the YRD reaches 25 µg/m³ by 2030, the number of cities meeting the standard increases from 128 to **176**.
- By 2035, the number of cities meeting the standard further increases to **285**.

Synergistic pathways of PRC's carbon peak, carbon neutrality, and clean air targets beyond 2035



- Synergistic pathway with carbon peak, carbon neutrality governance, and strict clean air actions, would greatly promote PRC's substantial air quality improvement: the national PM_{2.5} exposure could decrease close to WHO AQG in 2060.

PM_{2.5}-associated mortalities under synergistic pathways



- Strict carbon neutrality and clean air synergistic governance is the only pathway to completely defense adverse population aging effects, that PM_{2.5}-associated mortalities could keep decreasing during 2020-2060.

Key messages

- **Driven by three phases of clean air actions, emissions of major air pollutants in PRC have declined substantially, accompanied by significant improvements in air quality.**
- **Anthropogenic emission reductions have remained the dominant driver of PM_{2.5} improvement since 2013, despite additional contributions from meteorology and COVID-19 lockdowns.**
- **Upgrades on industrial boilers, promote clean fuels in the residential sector and controls in non-power industrial sectors were the most effective measures in each phase of the clean air actions.**
- **The implementation of the new standard brings new challenges, and further PM_{2.5} improvement will require synergistic air pollution and carbon mitigation.**

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Thank you for listening!

