Achievements of environmental protection of the "12th Five–Year Plan" period

CCCPC and the State Council have put the development of ecological progress and environmental protection on more important strategic position and made a series of key decisions and arrangements since the beginning of the "12th Five-Year Plan" period. Focusing on the control of air, water and soil pollution, China has firmly declared a war against pollution and made active progress in environmental protection.

Firmly declare a war against pollution. China has carried out the Action Plan for Prevention and Control of Air Pollution. Regional joint coordination mechanism for prevention and control of pollution has been established and improved in key regions such as Beijing-Tianjin-Hebei, the Yangtze River delta and Pearl River delta. China has developed the biggest ambient air quality monitoring network in developing countries. All 338 APL cities across the country have the capacity in monitoring 6 pollution indicators including $PM_{2.5}$. China has carried out the Plan for Prevention and Control of Water Pollution of Key River Basins and strengthened eco environment protection of drinking water source areas and lakes with relatively good water quality. The percent of surface water sections under national monitoring program failing to meet Grade Ⅴ standard went down by 6.8 percentage points with steady improvement of the water quality of the mainstream of big rivers. The government has finished the first national investigation on soil pollution.

Promote emission reduction. The daily urban sewage treatment capacity has increased from 125 million t in 2010 to 182 million t. The total capacity of coal-fueled power generating units with desulphurization facilities has gone up from 580 million kW to 890 million kW with the installation rate from 83% to over 99%. The total capacity of coal-fueled power generating units with denitrification facilities has gone up from 80 million kW to 830 million kW with installation rate from 12% to 92%. The total area of iron & steel sintering machine with desulphurization facilities has gone up from 29,000 m^2 to 138,000 m^2 with installation rate from 19% to 88%. The capacity of new dry process cement production lines installing denitrification facilities has been increased from 0 to 1.6 billion t. There was 12.9% reduction of COD, 18.0% reduction of SO_2, 13.0% reduction of ammonia nitrogen and 18.6% reduction of NO_x across the country compared with that of 2010.

Optimize economic development by environmental protection. MEP has conducted trial on identification of ecological red lines in 4 provinces (autonomous regions). Six provinces (autonomous regions) are the first group in the country releasing provincial environmental functional zoning. MEP has finished the SEA of the Development Strategy of West China and Development Strategy of Central China. The environmental protection departments at all levels have finished review of over 4,000 EIS. MEP has finished review of over 300 EIS. MEP has reviewed 1,164 EIA documents of construction projects and rejected 153 projects failing to meet the requirements, involving total investment of 760 billion yuan. MEP has enhanced guidance by standards and released 493 national environmental protection standards. The government has implemented stricter special emission limits for pollutants of key regions and key industries.

Carry out ecological development and comprehensive improvement of rural environment. The government has set up China National Committee for Biodiversity Conservation and released the China National Biodiversity Conservation Strategy and Action Plan (2011-2030). The central government has arranged 27.5 billion yuan special fund to support the completion of comprehensive environmental control of 72,000 villages, directly benefiting over 120 million rural population.

Strengthen prevention and control of pollution risks in key areas. The central government has arranged 17.2 billion yuan special fund to support the control of heavy metal pollution. Heavy pollution accidents have gone down from over 10 cases each year during 2010-2011 to less than 3 cases each year on the average during 2012-2015. The disposal of 6.70 million t chromium slag across the country, which have been stored from past production for several decades, has been completed. Environmental protection departments at all levels have properly handled nearly 2,600 various kinds of environmental incidences.

Enhance supervision on law enforcement. The newly amended Environmental Protection Law marks significant progress in environmental legislation and law enforcement. During 2011-2014, MEP in cooperation with several departments has carried out special environmental protection campaigns and mobilized 9.24 million person-times of law enforcement workers across the country. They have conducted over 3.62 million enterprise-times of inspection and investigated and punished 37,000 environmental infringements. The mechanism of cooperation and collaboration has been set up between administrative law enforcement and criminal enforcement with great progress in environmental justice.

Atmospheric Environment

General Situation

Air quality

Cities at or above prefecture level In 2015, all 338 APL cities level* across the country conducted environmental monitoring based on the newly amended Ambient Air Quality Standard. The monitoring results show that 73 cities met national air quality standard**, accounting for 21.6%; 265 cities failed to meet national air quality standard, taking up 78.4%.

The analysis results show that the percent of attainment days on air quality of the 338 cities*** was 19.2%～100% with the average at 76.7%. The average amount of days failing to meet air quality standard**** took up 23.3%. Among them, 15.9% of the days were under slight pollution, 4.2% under intermediate pollution, 2.5% under heavy pollution and 0.7% under very heavy pollution. The attainment rate was 100% for 6 cities such as Ma'erkang, Lijiang, Shangrila, Tacheng, Ngari and Nyingchi. The attainment rate was 80%～100% for 150 cities; 50%～80% for 152 cities and <50% for another 30 cities. In the non-attainment days, those with $PM_{2.5}$, O_3 and PM_{10} as the primary pollutants***** were in dominance, accounting for 66.8%, 16.9% and 15.0% of total non-attainment days respectively; while the percent of non-attainment days with NO_2, SO_2 and CO as primary pollutants was 0.5%, 0.5% and 0.3% respectively.

The indicator analysis results show that the range of annual average $PM_{2.5}$ concentration was 11～125 μg/m^3 with the average at 50 μg/m^3 (0.43 times exceeding Grade Ⅱ national air quality standard). The amount of days with daily average exceeding the standard took up 17.5% of the total; 22.5% cities met the national standard. The range of annual average PM_{10} concentration was 24～357 μg/m^3 with the average at 87 μg/m^3 (0.24 times exceeding Grade Ⅱ national air quality standard), down by 7.4% compared with that of 2014. The amount of days with daily average failing to meet the standard took up 12.1% of the total. 34.6% of the cities met the national standard. The range of annual average SO_2 concentration was 3～87 μg/m^3 with the average at 25 μg/m^3 (meeting Grade II national air quality standard), down by 16.1% compared with that of 2014. The amount of days with daily average failing to meet the standard took up 0.7% of the total. 96.7% of the cities met the national standard. The range of annual average NO_2 concentration was 8～63 μg/m^3 with the average at 30 μg/m^3 (meeting Grade Ⅱ national air quality standard), down by 6.3% compared with that of 2014. The amount of days with daily average failing to meet the standard took up 1.6% of the total. 81.7% of the cities met the national standard. The range of 90th percentile concentration of O_3 daily maximum 8-hour average****** was 62～203 μg/m^3 with the average at 134 μg/m^3. The amount of days with daily average failing to meet the standard took up 4.6% of the total. 84.0% of the cities met the national standard. The range of the 95th percentile concentration of daily CO average was 0.4～6.6 mg/m^3 with the average at 2.1 mg/m^3. The amount of days with daily average failing to meet the standard took up 0.5% of the total; 96.7% of cities met the standard.

Cities under Stage I monitoring based on the newly amended ambient air quality standard In 2015, the

*Cities at or above prefecture level (APL cities): including municipality, cities or regions at prefecture level, autonomous prefectures and league.

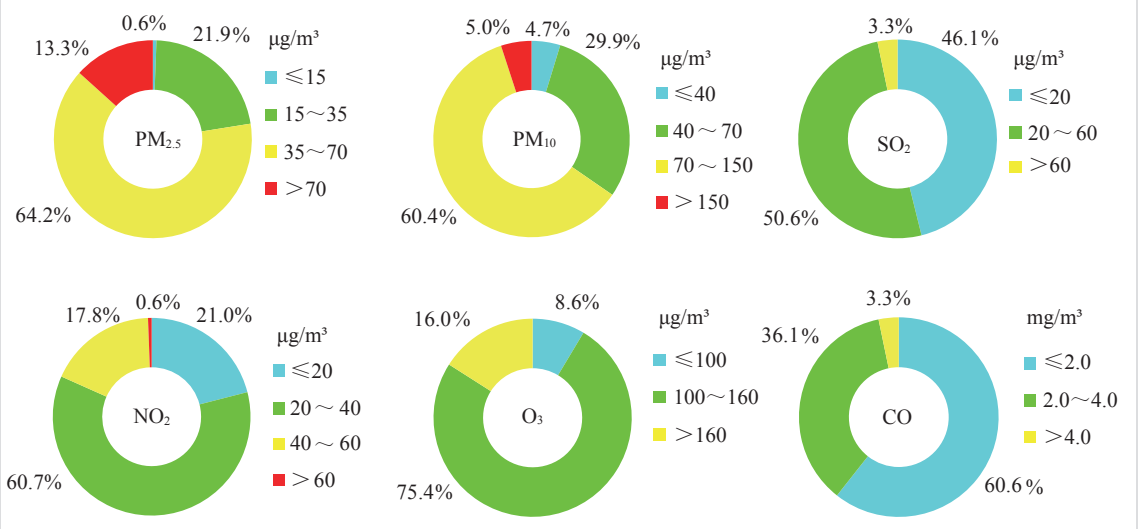
**Air quality meeting the standard: the ambient air quality meets the standard when the concentrations of all pollutants under assessment meet the standard.

***The amount of attainment days: It refers to the amount of days with AQI at 0～100.

****The amount of non-attainment days: the amount of days with AQI >100. Among them, AQI = 101～150 indicates slight pollution, 151～200 indicates intermediate pollution, 201～300 indicates heavy pollution and >300 very serious pollution.

*****Primary pollutant: When AQI >50, the pollutant with the biggest individual AQI is the primary pollutant.

******Percentile concentration: Based on the Technical Regulation for Ambient Air Quality Assessment (Trial) (HJ 663-2013), effective daily maximum 8-hour average of O_3 concentrations in the calendar year are ranked from small to big, compare the percentile value at 90% with the daily maximum 8-hour average of O_3 concentration of national standard date to judge if O_3 concentration meets the standard. The assessment of CO follows the same principle.



Percent of 338 cities at or above prefecture level with different concentrations of major pollutants in 2015

monitoring results of 74 cities under Stage I monitoring based on the newly amended ambient air quality standard (including cities at or above prefecture in key regions such as Beijing-Tianjin-Hebei, the Yangtze River delta and Pearl River delta, municipalities, provincial capital cities and cities under separate plan of the State Council) (the 74 cities) show that the urban air quality of 11 cities such as Zhoushan, Fuzhou, Xiamen, Shenzhen, Zhuhai, Jiangmen, Huizhou, Zhongshan, Haikou, Kunming and Lhasa met national air quality standard, 3 more than that of 2014, they were Xiamen, Jiangmen and Zhongshan. The ambient air of 63 cities failed to meet national air quality standard.

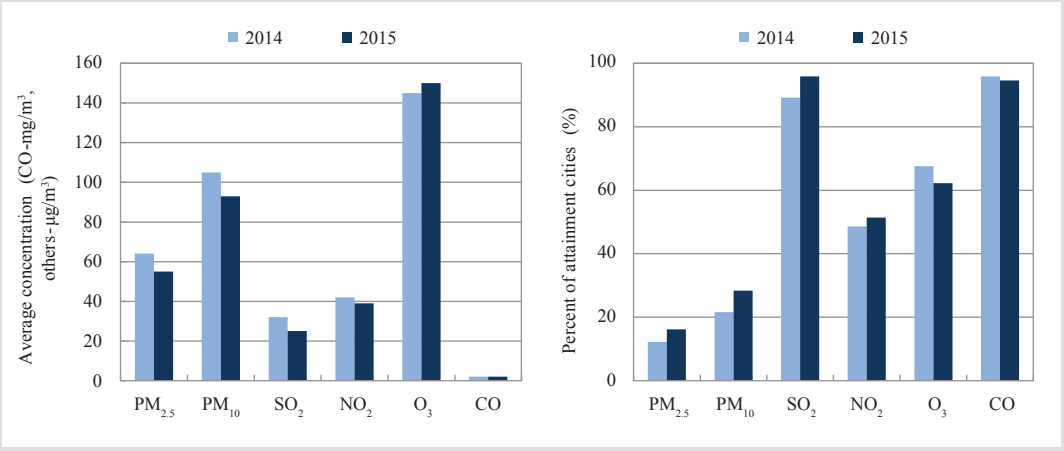
The analysis results show that the percent of days of the 74 cities meeting air quality standard was 32.9%～99.2% with the average at 71.2%, up by 5.2 percentage points compared with that of 2014 and up by 10.7 percentage points compared with that of 2013. The average amount of days failing to meet the standard took up 28.8%; 19.5% of which were under slight pollution, 5.2% under intermediate pollution, 3.2% under heavy pollution and 0.9% under very heavy pollution. The attainment rate was 80%～100% for 26 cities, 50%～80% for 40 cities. The non-attainment percent of 8 cities (Hengshui, Jinan, Baoding, Zhengzhou, Xingtai, Handan, Tangshan and Shijiazhuang) was less than 50%.

The analysis results of air quality comprehensive index* show that the top 10 cities with relatively good urban air quality (from No.1 to No.10) in the 74 cities were Haikou, Xiamen, Huizhou, Zhoushan, Lhasa, Fuzhou, Shenzhen, Kunming, Zhuhai and Lishui. The top 10 cities with poor air quality (from No.74 to No.65) were Baoding, Xingtai, Hengshui, Tangshan, Zhengzhou, Jinan, Handan, Shijiazhuang, Langfang and Shenyang.

The analysis results show that the annual average $PM_{2.5}$ concentration was 22～107 μg/m^3 with the average at 55 μg/m^3, down by 14.1% compared with that of 2014; 16.2% of the cities met National Ambient Air Quality Standard, up by 4.0 percentage points compared with that of 2014. The range of annual average PM_{10} concentration was 40～174 μg/m^3 with the average at 93 μg/m^3, down by 11.4% compared with that of 2014; 28.4% of the cities met the national air quality standard, up by 6.8 percentage points compared with that of 2014. The range of the annual average SO_2 concentration was 5～71 μg/m^3 with the average at 25 μg/m^3, down by 21.9% compared with that of 2014; 95.9% of the cities met the national air quality standard, up by 6.7 percentage points compared with that of 2014. The range of annual average NO_2

*Air quality comprehensive index: The sum of the quotients of concentration of the 6 air pollutants against corresponding Grade Ⅱ limit of assessment period is the air quality comprehensive index of the current city in that period, which is employed for ranking of urban air quality.

concentration was 14～61 μg/m^3 with the average at 39 μg/m^3, down by 7.1% compared with that of 2014; 51.4% of the cities met national air quality standard, up by 2.8 percentage points compared with that of 2014. The 90th percentile concentration of O_3 daily maximum 8-hour average was 95～203 μg/m^3 with the average at 150 μg/m^3, up by 3.4% compared with that of 2014; 62.2% of the cities met the national air quality standard, down by 5.4 percentage points compared with that of 2014. The 95th percentile concentration of daily average CO was 0.9～5.8 mg/m^3 with the average at 2.1 mg/m^3, same as that of 2014; 94.6% of the cities met the national air quality standard, down by 1.3 percentage points compared with that of 2014.



Annual comparison of six pollutants of the 74 cities under Stage I monitoring program in 2015

Beijing-Tianjin-Hebei region In 2015, the percent of days of the whole year of 13 APL cities in Beijing-Tianjin-Hebei meeting air quality standard was 32.9%～82.3% with the average at 52.4%, up by 9.6 percentage points compared with that of 2014 and up by 14.9 percentage points compared with that of 2013. The average percent of no attainment days was 47.6%; among them, 27.1%, 10.5%, 6.8% and 3.2% of which was under slight pollution, intermediate pollution, heavy pollution and very heavy pollution respectively. In the 13 cities, the percent of days meeting air quality standard was 82.3% for Zhangjiakou City; 50%～80% for 6 cities and less than 50% for the rest 6 cities. Among the non-attainment days, the amount of days with $PM_{2.5}$ as the primary pollutant was the most, taking up 68.4% of non-attainment days; followed by O_3 and PM_{10}, taking up 17.2% and 14.0% respectively.

The average $PM_{2.5}$ concentration was 77 μg/m^3 (1.20 times exceeding Grade Ⅱ national air quality standard), down by 17.2% compared with that of 2014. A total of 12 cities failed to meet national air quality standard. The average PM_{10} concentration was 132 μg/m^3 (0.89 times exceeding Grade Ⅱ national air quality standard), down by 16.5% compared with that of 2014; all the 13 cities failed to meet national standard. The average SO_2 concentration was 38 μg/m^3 (meeting Grade Ⅱ national air quality standard), down by 26.9% compared with that of 2014. All the 13 cities met the national standard. The average NO_2 concentration was 46 μg/m^3 (0.15 times exceeding Grade Ⅱ national air quality standard), down by 6.1% compared with that of 2014. 11 cities failed to meet the national standard. The 90th percentile concentration of O_3 daily maximum 8-hour average was 162 μg/m^3, same as that of 2014; 7 cities failed to meet the national standard. The 95th percentile concentration of daily average of CO was 3.7 mg/m^3, up by 5.7% compared with that of 2014. Four cities failed to meet the national air quality standard.

Beijing-Tianjin-Hebei and their surrounding areas (including Shanxi Province, Shandong Province, Inner Mongolia and Henan Province) was the region with high incidence of heavy air pollution in China. In 2015, there were a total of 1,710 day-times heavy pollution or above in 70 APL cities in the region, taking up 44.1% of the total in 2015. In different seasons, January-March and October-December were the seasons with high incidence of heavy pollution. In particular, there were several large scale heavy air pollution processes at regional level in December, 36.8% of the amount

Air quality comprehensive index and annual average of $PM_{2.5}$ concentration of 74 cities in 2015

City	Air quality comprehensive index	$PM_{2.5}$ ($\mu g/m^3$)	City	Air quality comprehensive index	$PM_{2.5}$ ($\mu g/m^3$)
Haikou	2.49	22	Qingdao	5.62	52
Xiamen	3.28	29	Yangzhou	5.64	55
Huizhou	3.31	27	Nantong	5.73	58
Zhoushan	3.35	29	Hangzhou	5.77	57
Lhasa	3.44	26	Taizhou	5.82	61
Fuzhou	3.54	29	Xining	5.87	49
Shenzhen	3.63	30	Zhenjiang	5.91	59
Kunming	3.73	30	Suqian	5.92	61
Zhuhai	3.78	31	Suzhou	5.93	58
Lishui	3.86	38	Hohhot	5.96	43
Zhongshan	3.92	33	Wuxi	6.02	61
Guiyang	3.99	39	Nanjing	6.08	57
Jiangmen	4.02*	34	Qinhuangdao	6.10	48
Taizhou	4.02	41	Changzhou	6.25	59
Dongguan	4.22	36	Lanzhou	6.50	52
Nanning	4.29	41	Yinchuan	6.51	51
Zhaoqing	4.32	39	Changchun	6.53	66
Foshan	4.47	39	Harbin	6.53	70
Nanchang	4.57	43	Chengdu	6.56	64
Guangzhou	4.61	39	Wuhan	6.60	70
Zhangjiakou	4.64	34	Xi'an	6.72	58
Quzhou	4.68	43	Xuzhou	6.75	65
Yancheng	4.89	49	Tianjin	6.87	70
Ningbo	4.91	45	Urumqi	7.00	66
Wenzhou	4.93	44	Taiyuan	7.13	62
Dalian	5.21	48	Cangzhou	7.28	70
Shanghai	5.32	53	Beijing	7.42	81
Jinhua	5.35	54	Shenyang	7.52	72
Huai'an	5.37	58	Langfang	7.89	85
Changsha	5.38	61	Shijiazhuang	8.70	89
Hefei	5.42	66	Handan	8.73	91
Chongqing	5.43	57	Jinan	8.78	90
Lianyungang	5.46	55	Zhengzhou	8.80	96
Chengde	5.48	43	Tangshan	8.97	85
Jiaxing	5.49	53	Hengshui	9.08	99
Huzhou	5.50	54	Xingtai	10.01	101
Shaoxing	5.61	55	Baoding	10.41	107

*The cities with the same air quality comprehensive index will have the same rank based on the Technical Regulations on Ranking of Urban Air Quality.

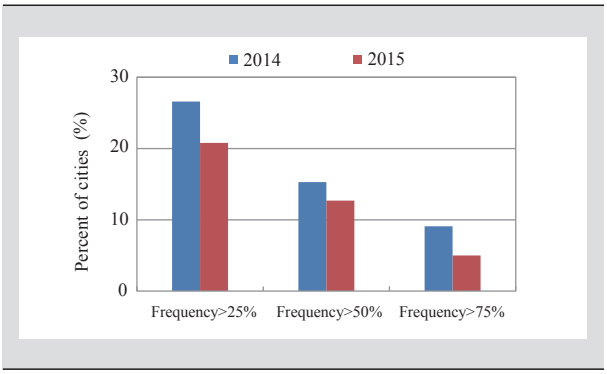
of days had heavy air pollution or above, significantly higher than that of other months.

The Yangtze River delta In 2015, 61.5%～90.8% of the total days of 25 APL cities in the Yangtze River delta met national air quality standard with the average at 72.1%, up by 2.6 percentage points compared with that of 2014 and 7.9 percentage points compared with that of 2013. The average amount of days failing to meet air quality standard took up 27.9%; the percent of days with slight pollution, intermediate pollution, heavy pollution and very heavy pollution was 20.9%, 4.6%, 2.3% and 0.1% respectively. In the 25 cities, the attainment rate was 80%～100% for 6 cities and 50%～80% for the rest 19 cities. In all the days failing to meet national air quality standard, the amount of days with $PM_{2.5}$ as the primary pollutant was the most, taking up 57.5% of the total; followed by O_3 and PM_{10}, accounting for 37.2% and 3.6% respectively.

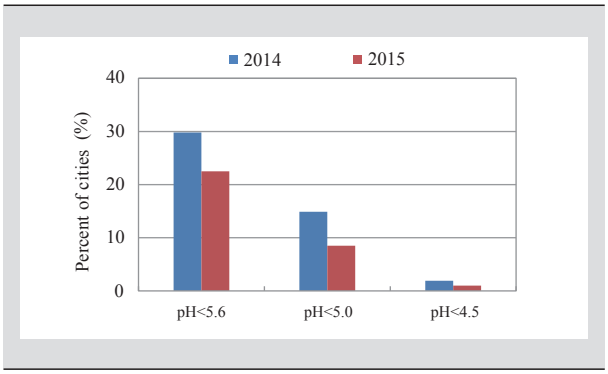
The average $PM_{2.5}$ concentration was 53 μg/m^3 (0.51 times exceeding Grade Ⅱ National Ambient Air Quality Standard), down by 11.7% compared with that of 2014. A total of 24 cities exceeded the national limit. The average PM_{10} concentration was 83 μg/m^3 (0.19 times exceeding Grade Ⅱ national air quality standard), down by 9.8% compared with that of 2014; 19 cities exceeded the national air quality standard. The average SO_2 concentration was 21 μg/m^3 (meeting Grade Ⅱ national air quality standard), down by 16.0% compared with that of 2014; all 25 cities met the national limit. The average NO_2 concentration was 37 μg/m^3 (meeting Grade Ⅱ national air quality standard), down by 5.1% compared with that of 2014. A total of 12 cities failed to meet the national air quality standard. The 90th percentile concentration of O_3 daily maximum 8-hour average was 163 μg/m^3, up by 5.8% compared with that of 2014. A total of 16 cities failed to meet the national standard. The 95th percentile concentration of daily average of CO was 1.5 mg/m^3, same as that of 2014, all 25 cities met the national air quality standard.

The Pearl River delta In 2015, the percent of days of 9 APL cities in the Pearl River delta meeting air quality standard was 84.6%～97.5% with the average at 89.2%, up by 7.6 percentage points compared with that of 2014 and 12.9 percentage points compared with that of 2013. The average percent of non-attainment days was 10.8%; 9.6% of which were under slight pollution and 1.2% under intermediate pollution. There was not any heavy pollution and very serious pollution. In non-attainment days, the amount of days with O_3 as the primary pollutant was the most, taking up 56.5% of the total; followed by $PM_{2.5}$ and NO_2, taking up 39.0% and 4.5% respectively.

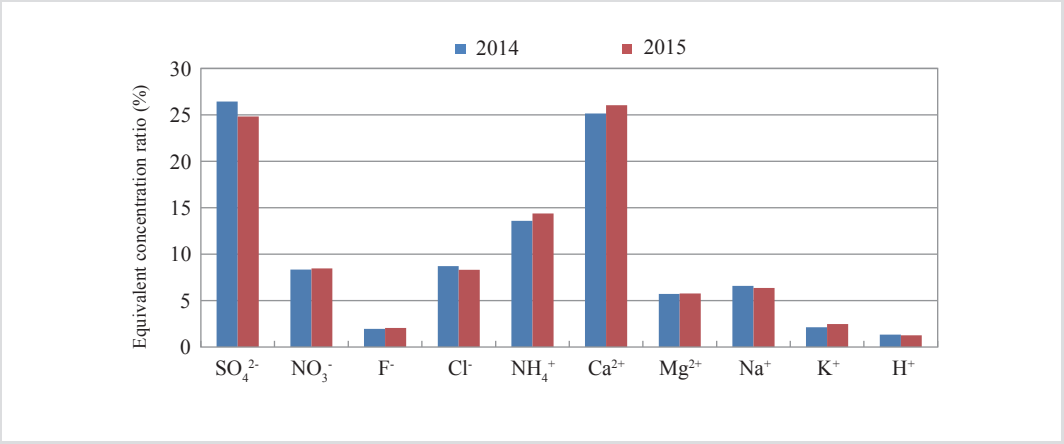
The average $PM_{2.5}$ concentration was 34 μg/m^3 (meeting Grade Ⅱ National Ambient Air Quality Standard), down by 19.0% compared with that of 2014; 4 cities failed to meet the national limit. The average PM_{10} concentration was 53 μg/m^3 (meeting Grade Ⅱ national air quality standard), down by 13.1% compared with that of 2014. All the 9 cities met the standard. The average SO_2 concentration was 13 μg/m^3 (meeting Grade Ⅱ national air quality standard), down by 27.8% compared with that of 2014. All the 9 cities met the standard. The average NO_2 concentration was 33 μg/m^3 (meeting Grade Ⅱ national air quality standard), down by 10.8% compared with that of 2014; 2 cities exceeded the standard. The 90th percentile concentration of O_3 daily maximum 8-hour average was 145 μg/m^3, down by 7.1% compared with that of 2014; one city exceeded the standard. The 95th percentile concentration of daily average of CO was 1.4 mg/m^3, down by 6.7% compared with that of 2014. All the 9 cities met the national air quality standard.



Annual comparison of the percent of cities with different acid rain frequency in 2015



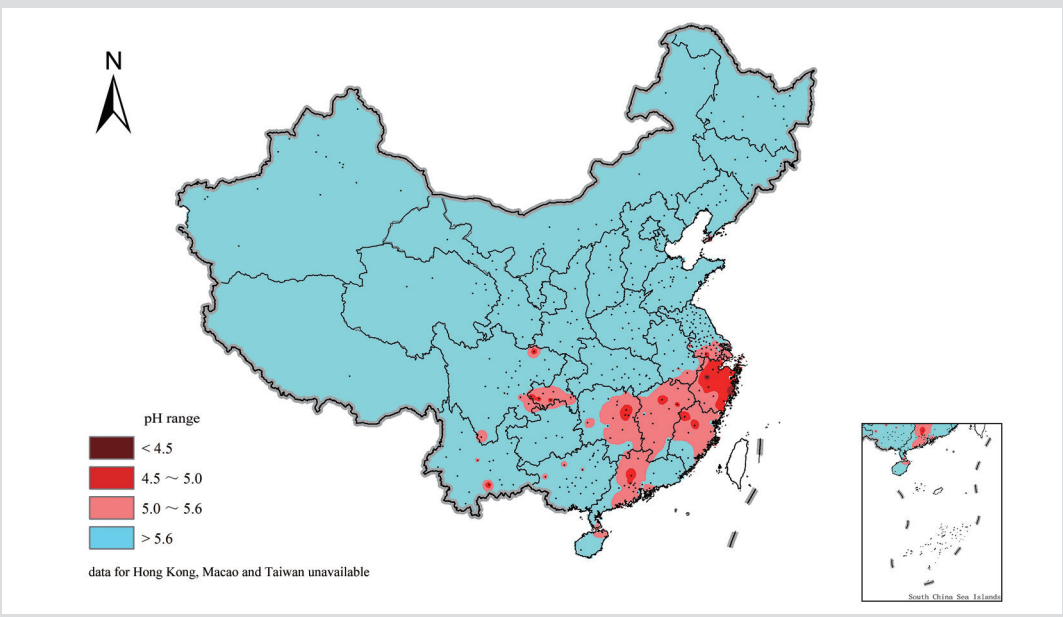
Annual comparison of the percent of cities with different annual pH of precipitation in 2015



Annual comparison of main ion equivalent concentration ratio of precipitation in 2015

Acid rain

Acid rain frequency In 2015, the average acid rain frequency of 480 cities (districts or counties) under precipitation monitoring was 14.0%. The percent of cities with acid rain was 40.4%. Among them, 20.8% of the cities had acid rain frequency over 25%, 12.7% cities had acid rain frequency over 50% and 5.0% cities had cities had acid rain frequency over 75%. The percent of cities with acid rain went down by 10.0 percentage points compared with that of 2010.



The isoline of annual pH of precipitation in China in 2015

Precipitation acidity In 2015, the annual average pH of precipitation across the country was 4.2 (Taizhou in Zhejiang Province)~8.2 (Korla in Xinjiang). Among them, the percent of cities with acid rain (annual average pH of precipitation < 5.6), relatively serious acid rain (annual average pH of precipitation < 5.0) and serious acid rain (annual average pH of precipitation < 4.5) was 22.5%, 8.5% and 1.0% respectively; down by 7.3, 6.4 and 0.9 percentage points respectively compared with that of 2014 and down by 13.1, 13.1 and 7.5 percentage points respectively compared with that of 2010.

Chemical composition In 2015, the main cations in precipitation were calcium and ammonium, taking up 25.9% and 14.5% respectively of total ion equivalent, up by 1.0 percentage point respectively compared with that of 2010. The key anion was sulfate radical, taking up 24.7% of the total ion equivalent, down by 3.8 percentage points compared with that of 2010; nitrate radical taking up 8.5% of the total ion equivalent, up by 1.1 percentage points compared with that of 2010. In general, the type of acid rain still was sulphuric acid.

Acid rain distribution In 2015, the total area of acid rain region was about 729,000 km^2, taking up 7.6% of total land area, down by 5.1 percentage points compared with that of 2010. Among them, the percent of land area with relatively serious acid rain or serious acid rain was 1.2% and 0.1% respectively of the total. The acid rain mainly was distributed in the region south to the Yangtze River and east to Yunnan-Guizhou Plateau. This region mainly includes Zhejiang, Shanghai, Jiangxi and most of Fujian, central and eastern part of Hunan, southern part of Chongqing, southern part of Jiangsu and central part of Guangdong.

Measures and Actions

【Implementation of the Action Plan for Prevention and Control of Air Pollution】 MEP has examined the implementation of the Action Plan of each province (autonomous region or municipality) in 2014 and urged the provinces with degradation of ambient air quality to take correction measures to improve their ambient air quality in accordance with the examination requirements of the Action Plan for Prevention and Control of Air Pollution. China has released the newly amended Law of the People's Republic of China on Prevention and Control of Atmospheric Pollution. This law makes clear the responsibility of local governments; greatly increases punishment; strengthens the prevention and control of pollution of coal, vehicle emissions and VOCs; enhances regional coordination to respond to weathers with heavy air pollution. All the 22 supporting policies for the Action Plan for Prevention and Control of Air Pollution have been carried out and the emission standards of 25 major industries required by the Action Plan for Prevention and Control of Air Pollution have been released. MEP has printed out and distributed the National Key Tasks on Prevention and Control of Air Pollution in 2015 based on the requirements of the Circular of the General Office of the State Council on Printing out and Distribution of the Program on Work Division of Major Departments on Action Plan for Prevention and Control of Air Pollution. MEP has established early warning system for ambient air quality and inform the government of each province (autonomous region or municipality) of the improvement of air quality each quarter. MEP has commended the provinces and cities with significant improvement of air quality and supervised the provinces and cities with slow progress and poor work. It has supervised major cities on environmental protection and mainly checked various kinds of industrial parks and industrial zones; key industries such as thermal power, iron & steel and cement; as well as small workshops and units with coal fueled boilers not complying with national policy. In addition, it has conducted law enforcement inspection in key regions such as Handan, Qinghuangdao, Yuncheng and Tangshan with the help of unmanned aerial vehicle.

The overall urban ambient air quality has been improved across the country with gradual reduction of annual average $PM_{2.5}$, PM_{10}, NO_2, SO_2 and CO concentration year by year as well as reduction of amount of days with heavy air pollution in most cities since the implementation of the Action Plan for Prevention and Control of Air Pollution. However, air quality is still facing grave situation. Cities and regions in eastern part of China have high pollution load of $PM_{2.5}$ and PM_{10}. In northern part of China, heavy air pollution is prominent in the winter. In addition, ozone pollution in key regions emerges.

【Promotion of pollution control of key industries】 The government has carried out comprehensive control of VOCs of major industries. It has printed out and distributed the Guide of Petrochemical Industry for Investigation on VOCs Pollution Sources and Guide of Petrochemical Industry for Detection and Repair of Leakage. They have improved the fine management for prevention and control of VOCs pollution and workability of management measures of petrochemical industry. The government has conducted the demonstration project on heat supply by biomass-fired boilers and development of demonstration sites on biogas in Inner Mongolia to facilitate the development of green energy. The authority has released the Circular on the Trial of Off-

Peak Production of Cement in Heating Areas in Northern Part of China to promote energy saving and emission reduction, address the problem of excessive capacity of cement industry and improve air quality.

【Prevention and control of vehicle emissions】 The government has facilitated the phasing out of yellow-label vehicles and successfully met the target of phasing out 1.26 million yellow-label vehicles identified in the Report on the Work of the Government. The government has strengthened supervision on environmental attainment of new vehicles. In the production process, it has randomly detected the emissions of 12 engine manufacturing enterprises, 9 light or heavy diesel vehicle manufacturers as well as new vehicles. The government has actively extended new energy vehicles, with annual production of 379,000 such vehicles, 4 times more than that of 2014. The government has actively promoted improvement of oil quality and Grade Ⅳ vehicle petrol and diesel has been supplied across the country. Regions like Beijing, Tianjin and Shanghai are the first to supply Grade Ⅴ vehicle petrol and diesel.

【Response to heavy pollution weather】 In 2015, 280 APL cities in 24 provinces (autonomous regions or municipalities) across the country have developed emergency plans for heavy air pollution. Beijing-Tianjin-Hebei region have issued 154 early warnings on heavy pollution weather. The authority has conducted special supervision on emergency response to heavy pollution weather in key regions, focusing on elevated sources, control of bulk coal, emissions from cluster of small enterprises, construction sites and VOCs emission in the period of continuous heavy air pollution of Beijing-Tianjin-Hebei region.

Law of the People's Republic of China on Prevention and Control of Atmospheric Pollution

The amended Law of the People's Republic of China on Prevention and Control of Atmospheric Pollution was adopted at the 16th Meeting of the Standing Committee of the 12th National People's Congress on August 29, 2015. President Xi Jinping signed No.31 Order of the President to officially promulgate the Law on the same day, which shall go into effect as of January 1, 2016.

The newly amended Law of the People's Republic of China on Prevention and Control of Atmospheric Pollution stipulates basic principle, basic system and measures in the field of prevention and control of air pollution. The Law has the following several distinctive characteristics: 1) Clearer main line. The Law clearly states that prevention and control of air pollution should aim at improving ambient air quality. The responsibility of local governments as well as examination and supervision shall be strengthened. 2) More prominent highlights. The Law highlights local governments and enterprises as the two key main bodies. It includes promoting local governments to fulfill their main body responsibility for improving ambient air quality of their region. It specifies a series of institutional measures such as local government responsible for ambient air quality within its jurisdiction, MEP examination on the performances of provincial governments, development of attainment plan within a given period of time by the cities failing to meet the standard, warning of environmental protection department at higher level to the head of subordinate government failing to meet the target and rejecting EIS of new construction project in regions with excessive pollution load. In addition, it promotes all enterprises to meet pollution emission standard. 3) More complete contents. First, adhering to source control. The Law clearly requires transforming economic development mode, optimizing industrial structure and layout and adjusting energy mix. It requires that atmospheric environment protection requirements should be made clear when establishing quality standards of products containing VOCs such as coal, petroleum, coke, biomass fuel and paint as well as fireworks and boilers. The Law makes clear that fuel quality standard should meet the national requirement for the control of air pollution. Second, adhering to comprehensive prevention and control. In view of current status of air pollution of coexistence of several kinds of pollutants and superimposition of many pollution sources in China, the Law requires that more efforts shall be made in comprehensive prevention and control of the pollution from coal combustion, industry, vehicles & ships, dust and agriculture; synergy control of air pollutants such as particulate, SO_2, NO_x, VOCs and ammonia as well as GHG so as to prevention and control air pollution. Third, adhering to problem-oriented approach. In view of current high frequency of heavy pollution weather, the Law sets a special chapter for joint prevention and control of air pollution in key regions and response to heavy pollution weather. 4) Stricter supervision. The Law consolidates the long-term measures of the Action Plan for Prevention and Control of Air Pollution. It specifies a series of institutional measures such as meeting the standard in a given period of time, graded examination, administrative warning, rejecting approval of EIS of new construction projects in regions with excessive pollution load, source control, control of vehicle emissions, reduction of coal consumption, combined measures for control of both point and non-point sources, regional prevention and control of pollution. As a result, it develops stricter supervision system. 5) Severer punishment. Based on the newly amended Environmental Protection Law, the current Law presents stronger punishment to environmental infringements causing air pollution. First, where there is environmental infringement, there is punishment apart from advocated rules. There are 30 articles in the Legal Liability section, taking up over 20% of total amount of articles, involving over 90 kinds of infringements. Second, it raises the upper limit of fines. Third, it makes detailed provisions and adds daily fines based on the newly amended Environmental Protection Law. Fourth, increase of the types of punishment. For example, administrative punishments include ordering stop of operations, shut down, cease of production for corrections, cease of operation for corrections, confiscation, cancel of qualification, public security penalty and so on. In addition, it also specifies civil compensation responsibility and criminal responsibility.

The promulgation of the newly amended Law of the People's Republic of China on Prevention and Control of Atmospheric Pollution reflects new requirements of CCCPC and the State Council for the development of ecological progress, meets new public expectations on improving ambient air quality, and identifies the focus of prevention and control of air pollution in the new era. With strong relevance and workability for addressing prominent problems in the field of prevention and control of air pollution, the newly amended Law of the People's Republic of China on Prevention and Control of Atmospheric Pollution provides a sound legal guarantee for the shift of the focus of preventing and controlling air pollution to improvement of ambient quality.

Ensure good air quality during the commemoration of the 70th Anniversary of the Victory of the Chinese People's War of Resistance Against Japanese Aggression and The World Anti–Fascist War

To ensure smooth progress of the commemoration of the 70th Anniversary of the Victory of the Chinese People's War of Resistance Against Japanese Aggression and The World Anti-Fascist War during August 20-September 3 of 2015, MEP and the mechanism for joint prevention and control of air pollution of Beijing-Tianjin-Hebei and their surrounding areas as well as governments of Beijing, Tianjin, Hebei, Shanxi, Inner Mongolia, Shandong and Henan have closely cooperated, spared no efforts, controlled air pollution by joint prevention and control, made strict law enforcement, enhanced supervision, actively taken measures such as monitoring and prediction of air quality and successfully finished the task of ensuring good air quality during the commemoration period.

The ambient air quality of Beijing was excellent during the military parade at 9:00-12:00 of September 3. The air quality of Beijing-Tianjin-Hebei and their surrounding areas met Grade I or II national air quality standard.

The overall air quality of Beijing was good and the average $PM_{2.5}$ concentration was 18 μg/m^3 during August 20-September 3, down by 73.1% compared with that of the same period of 2014. The daily average $PM_{2.5}$ concentration met Grade I standard for 15 consecutive days, the best record since the beginning of $PM_{2.5}$ monitoring. The overall ambient air quality of 70 cities in Beijing-Tianjin-Hebei and their surrounding areas was good. The average $PM_{2.5}$ concentration was 35 μg/m^3. The average $PM_{2.5}$ concentration of 52 cities went down by 34.0% compared with that of the same period of 2014.