The situation concerning control of emission pollution by vehicles in Beijing

Beijing Municipal Environmental Protection Bureau

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一、基本情况

I. Basic information

- 北京机动车保有量快速增长，每年以超过10%速度增长，目前注册数量已突破590万辆
- The number of vehicles in Beijing grows at a rate of more than 10% per year, and now exceeds 5.9 million vehicles registered in Beijing.
- 外埠进京货车日均约3万辆次
- The number of trucks coming to Beijing from outside is about 30,000 per day
- 外埠号牌长期在京使用的客车约70万辆
- The number of non-local private cars that used in Beijing for a long time is about 700,000

![Graph showing the increase in vehicle numbers from 1998 to 2014.](image)
一、基本情况
I. Basic information

■移动源排放PM2.5占本地排放源的45%
■排放的绝对量下降，但相关量上升
■移动源中柴油车和非道路移动机械贡献最大，占64%

■PM2.5 emissions from mobile sources account for 45% emissions from local emission source
■The absolute emissions decrease, but correlative emissions increase.
■Among mobile sources, diesel vehicles and non-road mobile machinery (NRMM) are the biggest contributors, with a contribution of 64%.
I. Basic information

Coal was cut from 20 million tons to 5 million tons per year

Vehicle emissions have taken various measures

Strengthen construction dust management

Industrial structure optimization and upgrading

Annual PM2.5 (2013-2017)

Heavy pollution days (2013-2017)
二、采取的主要措施
II. Major measures adopted

(一) 不断严格机动车排放标准
(I) The emission standards for vehicles have been continuously tightened

- 2013.3，开始实施国五标准 (相当于欧五)  
- In March 2013, the National-V Standard (equivalent to the Euro 5 Regulation) came into effect.

- 2013.7，制定并实施重型整车排放标准 (PEMS)  
- In July 2013, the emission standard (PEMS) for heavy-duty whole vehicles was formulated and came into effect.
二、采取的主要措施
II. Major measures adopted

（一）不断严格机动车排放标准
(I) The emission standards for vehicles have been continuously tightened

➢ 2016.1，公交等8类城市车辆要有壁流式DPF。目前已有2万辆车带有DPF
➢ 8 categories of new urban vehicles such as the buses and garbage trucks that must have wall-flow DPF can be registered in Beijing from Jan. 2016. The number of heavy duty vehicles with DPF is more than 20,000

➢ 2017.12，制定实施《重型汽车排气污染物排放限值及测量方法（OBD法 第Ⅳ、Ⅴ阶段）》，明确整车OBD限值；修订《重型汽车排气污染物排放限值及测量方法（车载法 第Ⅳ、Ⅴ阶段）》，进一步加严重型整车排放限值

➢ In December 2017, the Emission Limits and Measurement Methods for Exhaust Pollutants of Heavy Vehicle (OBD method, IV and V phases) were formulated and came into effect, thus the whole-vehicle OBD limits were clarified. The Emission Limits and Measurement Methods for Exhaust Pollutants of Heavy Vehicle (on-board measurement method, IV and V phases) were revised, and the whole-vehicle emission limits were further tightened.
二、采取的主要措施

II. Major measures adopted

(二) 改善车用油品质量

(II) Improve the quality of automobile oil products

➢ 2012.5，实施京五车用汽油和柴油标准
➢ In May 2012, the Beijing-V motor gasoline and diesel oil standards came into effect.

➢ 2017.1，实施京六车用汽油和柴油标准
➢ In January 2017, the Beijing-VI motor gasoline and diesel oil standard came into effect.

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二、采取的主要措施

II. Major measures adopted

（三）加快老旧车淘汰更新

(III) Accelerate the elimination and renewal of old vehicles

五年淘汰216.7万辆老旧车

2.167 million old vehicles were eliminated during five years.

1、不断扩大低排放区面积和标准

1. Continuously expand the area and standards of low-emission areas

➢2003年，二环内禁止国0汽油车和国3以下柴油车

➢Since 2003, the national-0 gasoline vehicles and the diesel vehicles below national-3 standard have been prohibited within the Second Ring Road.

➢2017年，五环内禁止国3以下汽油车，六环内禁止国4以下柴油车

➢Since 2017, the gasoline vehicles below national-3 standard have been prohibited within the Fifth Ring Road, and the diesel vehicles below national-4 standard have been prohibited within the Sixth Ring Road.
二、采取的主要措施
II. Major measures adopted

(三) 加快老旧车淘汰更新
(III) Accelerate the elimination and renewal of old and used vehicles

2、自2009年，每年实施车辆淘汰补助政策
2. Since 2009, the subsidy policy for vehicle elimination has been implemented annually.

➢ 自2009年至今，政府每年补助老旧车淘汰资金约10亿元，2017年补助资金达到16亿元；
➢ The subsidy for the retired of old vehicles every year in Beijing is about 1 billion RMB from 2009, and the subsidy reached 1.6 billion RMB in 2017

➢ 轻型车根据使用年限，补助2500元到1.4万元，平均补助约8000元；
➢ The subsidy for the retired of old car is from 2,500 RMB to 4,000 RMB according to the service life, and the average subsidy is about 8,000 RMB per car.

➢ 重型车根据吨位和使用年限，补助3000元到10万元，平均补助5万元
➢ The subsidy for the retired of old truck is from 3,000 RMB to 100,000 RMB according to the tonnage and service life, and the average subsidy of about 50,000 RMB per truck
二、采取的主要措施
II. Major measures adopted

（四）加强在用车排放执法
(IV) Strengthen law enforcement on vehicle emissions

➢在高速路通道、市内主要道路等重型车流量大的区域，环保与交警共同执法。重点检查烟度、OBD、尿素等内容

➢In highway channels, main urban roads and heavy traffic areas with heavy-duty vehicles, environmental protection personnel and traffic polices jointly enforce the law and put the focus on checking smoke intensity, OBD, urea, NOx, etc.

➢今年1月至6月，处罚排放超标重型柴油车约15万辆次

➢From January to June this year, about 150,000 vehicle-times of heavy diesel vehicles with excessive emissions were punished.
二、采取的主要措施

II. Major measures adopted

（五）加强机动车定期检测

(V) Strengthen regular inspection of motor vehicles

➢ 重型车用加载减速法（LUGDOWN method），轻型车用稳态加载法（ASM）

年度检验排放

➢ During annual inspection of emission, the LUGDOWN method should be used to check heavy-duty vehicles, and the ASM method should be used to check light-duty vehicles.

➢ 加强检测机构的监管。今年3月，本市发布实施了《机动车检验检测机构记分制管理办法》，共58项记分条款。按照问题的严重程度对检验检测机构实施停业整顿、政府约谈、企业自查等管理措施，直至吊销资质

Strengthen the regulation made by Beijing EPB. In March this year, Beijing City issued and implemented the "Administrative Measures on the Marking System for Motor Vehicle Inspection and Testing Stations", with 58 marking clauses in total. According to the severity of issues, inspection and testing Stations should be subjected to management measures such as suspension of business for rectification, government's questioning, enterprises self-inspection, even disqualification.
二、采取的主要措施
II. Major measures adopted

（六）设置非道路机械低排放区

(VI) Establish low-emission areas for non-road machineries

➢2017年，五环路内、亦庄、通州内禁止使用不符合北京Ⅲ类排放限值标准的挖掘机、装载机、挖掘装载机、叉车。

➢4 categories of off-road, such as excavators, loaders, loader-diggers and forklifts that fail to meet the standard of Beijing Ⅲ emissions standard will be fined 50,000 RMB to 100,000 RMB per off-road within the low emission zone from 2017

➢违反规定，处5-10万元罚款

➢In the case of violation of regulations, a fine of 5-100,000 yuan should be implemented.
二、采取的主要措施

II. Major measures adopted

（七）推广电动车

（VII）Development of EV

1、基本情况

1. basic information

➢ 电动车18.8万辆，占全国电动汽车总量的10%以上
➢ There are 188,000 EV in Beijing, and it accounts for more than 10% of China
➢ 建成充电桩13万个
➢ More than 130,000 charging piles were set up
二、采取的主要措施

II. Major measures adopted

2、搭建电动汽车运营服务保障平台

2.Setting up EV service platform

全天实时监控动力电池电压、电流、温度等安全运营信息，实现故障预警。

Some information, including battery voltage, current and temperature, will be monitored in real-time, and it can warn fault in advance.
二、采取的主要措施
II. Major measures adopted

3. Setting up incentive policy system

➢ 购车环节：根据行驶里程不同，每辆车补助约1-10万元
➢ Subsidy police: the subsidy is about 10,000 to 100,000 RMB per EV depending on the E-driving range

➢ 上牌环节：无需摇号，自动分配
➢ License plate: Compared to a lottery for license plates, EV can get license by allocated in Beijing, and it can be used during rush hour.
二、采取的主要措施
II. Major measures adopted

（八）实施小客车总量调控政策
（VIII）Implementation a policy of total car control

- 依据国家大气法和地方条例，2011年实施政策，每月摇号
- A policy of lottery for car's license plates has been implemented since 2011 in Beijing, in accordance with national and local clean air laws
- 为实现2017年总量600万的目标，指标从每年24万减到15万
- In order to achieve the goal of 6 million vehicles in 2017, the indicators are lowered from 240,000 to 150,000 per year.

- 中国广州、天津等其他城市也实施了类似政策。
- Similar policies have been implemented in other cities such as Guangzhou and Tianjin in China.

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual indicator for car per year</th>
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<tbody>
<tr>
<td>2011-2013</td>
<td>240,000</td>
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<tr>
<td>2014-2017</td>
<td>150,000</td>
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</table>
III. Main tasks from 2018 to 2020

Put the focus on the emission pollution caused by heavy-duty diesel vehicles and NRMM, coordinate "vehicles, oil and roads", win the defense battle for blue sky, and fight the tough battle against pollution caused by diesel trucks.

- Adjust transportation structure
- Vigorously promoting electric vehicles
- Speed up the elimination of high-emission diesel truck
- Strengthen the regulation of non-road machinery
- Implement more strict emission standards for new vehicles
- Implement more strict supervision over oil product quality
- Promote the construction of mobile source big-data monitoring system
三、 2018年至2020年主要工作
III. Main tasks from 2018 to 2020

（一）加严新车排放标准
(I) Strengthen emissions standard of new vehicles

➢ 公交、环卫重型柴油车于2019年7月实施国6B，其他车辆于2020年1月实施国6B

➢ Heavy duty vehicles of buses and garbage truck implement China 6b in July, 2019; other vehicle include light duty vehicles implement China 6b in Jan, 2020

➢ 加大新车排放一致性和在用符合性抽检力度，开展PEMS测试和OBD系统执法检查，督促汽车生产企业落实责任

➢ Intensify the casual inspection of new vehicles in terms of emission consistency and in-use compliance (IUC), carry out the PEMS test and law enforcement inspection of OBD system, and urge auto production enterprises to fulfill responsibility
III. Main tasks from 2018 to 2020

(II) Strengthen law enforcement on NOx emission from in-use heavy duty vehicles

- The normal use of AdBlue is the key to ensure the attainment of NOX standard, and simple check of Adblue level is unable to determine whether NOX is qualified or not.

- In 2017, the Beijing local standard *Rapid Testing of NOx and Limit Value Method for Heavy-Duty Vehicles* came into effect.

- The in-use vehicles that fail to meet the NOX emission standard are punished according to law, and the PEMS traceability inspection of vehicle models with concentrated problems has been carried out.

### Emission levels

<table>
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<tr>
<th>Stage</th>
<th>NOx Emission Limit</th>
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<tr>
<td>4th</td>
<td>1250 ppm</td>
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<tr>
<td>5th</td>
<td>1000 ppm</td>
</tr>
<tr>
<td>6th</td>
<td>550 ppm</td>
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</table>

Emission levels are as follows:

- **The 4th stage**: 1250 ppm
- **The 5th stage**: 1000 ppm
- **The 6th stage**: 550 ppm
三、2018年至2020年主要工作

III. Main tasks from 2018 to 2020

（三）重点行业车辆实施排放在线监控

(III) Online monitoring of vehicle emissions in key industries

➢2016年研究试点500余辆车排放在线监控，实施监控OBD报警状态、故障后行驶里程、NOx超标、尿素消耗不正常等问题

➢In 2016, the pilot study on online emission monitoring of more than 500 vehicles was launched; the monitoring of OBD alarm, mileage after fault, NOx out of limit, abnormal consumption of AdBlue were implemented.

➢2017年制定并实施《重型汽车排气污染物排放限值及测量方法 OBD法》地方标准，明确在线监控内容和要求

➢In 2017, the local standard Emission Limits and Measurement Methods for Exhaust Pollutants of Heavy Vehicle (OBD method) was formulated and came into effect, and thus clarified the contents and requirements of online monitoring.

➢在公交、环卫、货运和渣土车等行业推广排放在线监控

➢Promote online monitoring of emissions in bus, sanitation, freight and residue industries vehicles
三、 2018年至2020年主要工作

(四) 鼓励新能源车发展

(IV) Encouraging the development of EV

推进新增和更新的公交、出租、环卫、邮政、轻型物流配送等车辆基本为电动车。

The new and updated buses, taxis, garbage truck, postal truck, light duty logistics truck are basically electric vehicles.

到2020年，邮政、快递、轻型环卫车辆基本为电动车，办理货车通行证的轻型物流配送车辆基本为电动车，在中心城区和城市副中心使用的公交车为电动车。

By 2020, postal truck, express truck, light duty garbage truck and logistics truck will be basically electric vehicles, and the buses used in central areas and subcenter of Beijing are electric vehicles.

到2020年，全市新能源车保有量达到40万辆左右。

By 2020, the number of EV in Beijing will be about 400,000
谢谢！
Thanks!