

# 北京市机动车排放污染控制与维修

BEIJING I/M PROGRAM

北京市环境保护局

BEIJING EPB

## 北京市基本情况

### BRIFE INTRODUCTION

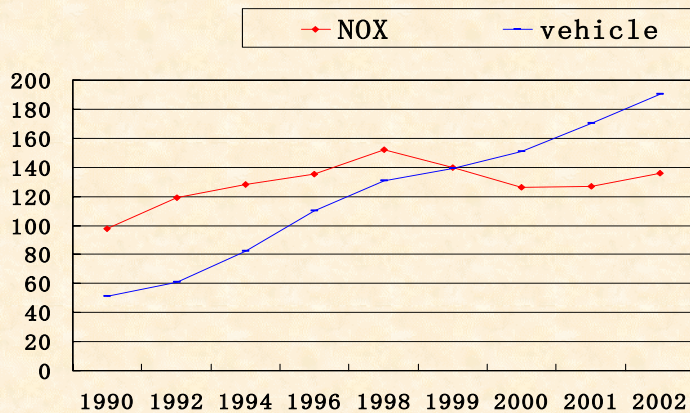
- 北京面积Beijing area: 16800km<sup>2</sup>
- 北京地理geography: 平原Plato 1/3 , 山区mountane2/3
- 人口population: 12.50milions
- 平均温度annual average temperature : 12℃
- 年均降雨annual average drop: 640mm
- 道路面积road area: 43.00million km<sup>2</sup>
- 机动车保有量total vehicles: 1.90milions(2002)

## 北京市大气污染的主要问题 the main problems of air pollutant of Beijing (1998)

- 总悬浮颗粒物 (TSP) 超标 exceed 89%
- PM10 PM2.5 来源复杂 complexity resource
- 二氧化硫 (SO<sub>2</sub>) 超标 exceed 100%
- 氮氧化物 (NO<sub>x</sub>) 超标 exceed 204%

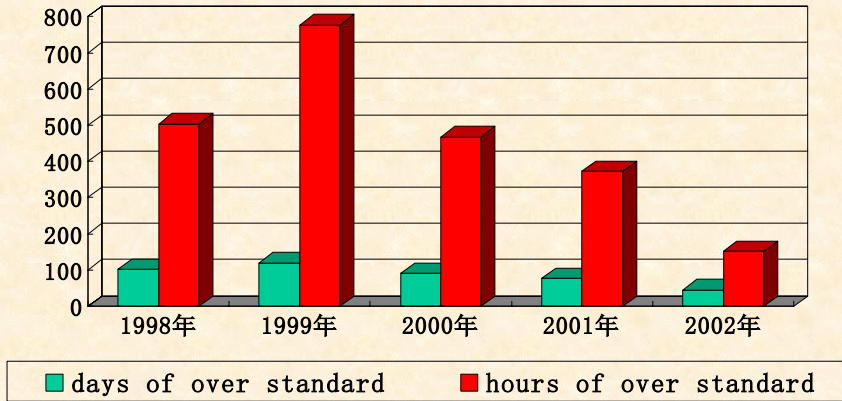
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## 北京市机动车保有量与氮氧化物年变化 the relation between total vehicles and No<sub>x</sub>



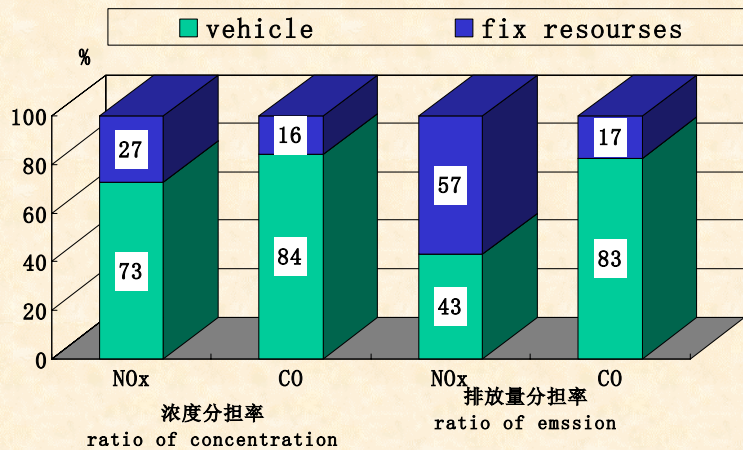
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## 北京市臭氧变化情况 O<sub>3</sub> circumstances of Beijing



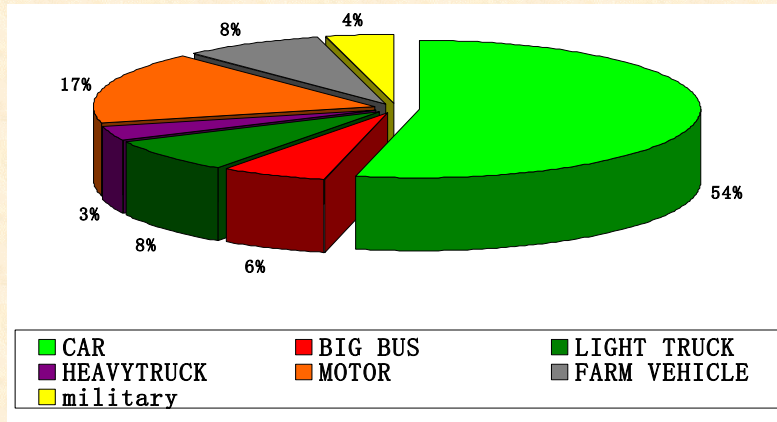
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## 机动车排污对环境的分担率图 contribution ratio of vehicles emission

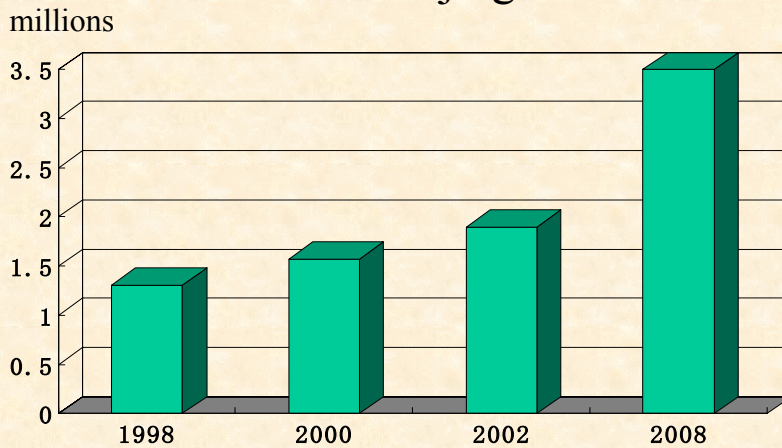


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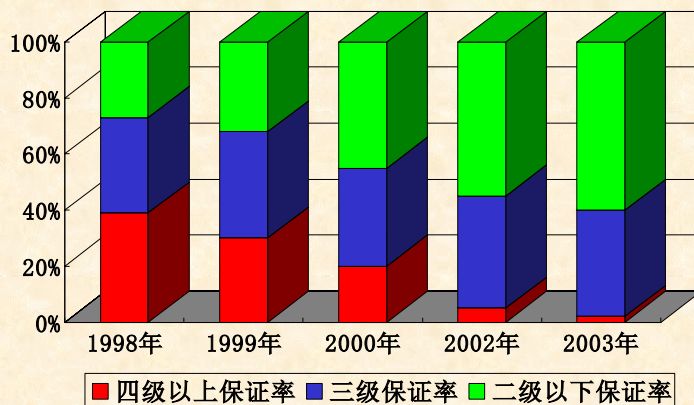
2002年北京市机动车保有量  
The compose of Beijing vehicles 1.90million on 2002



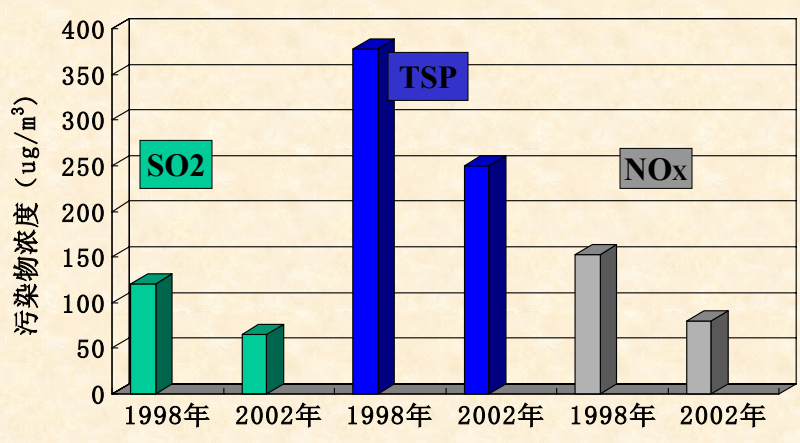
北京市机动车保有量预测  
Prediction of Beijing vehicles



### 北京市区空气质量目标 the air quality goal of Beijing downtown



### 北京市环境质量目标 the goal of air quality of Beijing

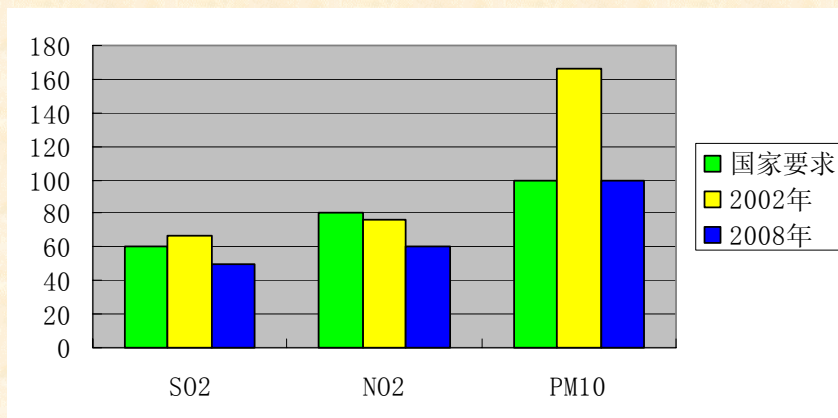


## 北京市大气污染防治的重点 the key points anti-air pollutant of Beijing

- 改善能源结构，控制煤烟型污染。
- Change energy construction and control coal pollutant
- 防治机动车污染。
- Prevention and control of vehicle emission
- 减少扬尘污染。
- Reduce dust pollutant
- 控制工业污染。
- Control industry pollutant

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## 北京市市区空气质量规划目标



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## 机动车排放污染的治理 the management of vehicle emission

- 完善标准体系，逐步执行严格标准，
- Set up local standards and regulations
- 新车排放控制
- new vehicles emission control
- 在用车排放管理
- administration of vehicles in-use
- 关于车辆环保标志的管理
- administration of environmental protection marks of vehicles

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完善标准体系，逐步执行严格标准，  
**Set up local standards and regulations**

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## 北京市颁布实施的15项地方标准 15 local standards of vehicle emission

- 《轻型汽车排放污染物标准》
- Emission standard for exhaust pollutants from light-duty vehicles
- 《重型汽油机排放标准》
- Emission standard for exhaust pollutants from gasoline engines of vehicles
- 《重型柴油机排放标准》
- Emission standard for exhaust pollutants from diesel engines of vehicles
- 《汽油车双怠速污染物排放标准》
- Emission standard for pollutants at double idle speed from vehicle with petrol engine

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- 《柴油车自由加速排放标准》
- Emission standard for smoke at free acceleration from vehicles with diesel engines
- 《农用车及运输拖拉机排放标准》
- Emission standard for smoke at free acceleration from farm vehicles and tracker with diesel engines
- 《摩托车、轻便摩托车污染物排放标准》
- Emission standard for exhaust emissions from motorcycles and mopeds
- 《轻型汽油车简易瞬态工况污染物排放标准》
- Emission standard for exhaust pollutants from light-duty gasoline vehicle under short transient driving cycle

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- 《汽油车稳态加载污染物排放标准》
- Emission standard for exhaust pollutants from gasoline vehicle under steady-state loaded mode
- 《柴油车加载减速烟度排放标准》
- Exhaust smoke standard for diesel vehicle under lug-down test
- 《柴油机全负荷烟度标准》
- Emission standard for smoke at full load from diesel engine of vehicle
- 《农用运输车加载减速烟度排放标准》
- Exhaust smoke standard for farm vehicle under lug-down test

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- 《摩托车稳态加载污染物排放标准》
- Emission standard for exhaust pollutants from motor vehicle under steady-state loaded mode
- 《非道路用柴油机排气可见污染物限值及测量方法》
- Limits and measurement methods for Exhaust Visible Pollutants from non-road Diesel Engines
- 《非道路用柴油机排气污染物限值及测量方法》
- Limits and measurement methods for exhaust Pollutants from non-road Diesel Engines

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正在制定的地方标准  
will be to set up the local standards in 2004

- 《机动车污染物排放遥测检测标准》
- Remote test Emission standard for exhaust pollutants
- 《车用汽油》
- Gasoline for motor vehicles
- 《车用柴油》
- Diesel fuel for motor vehicles

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序号	项目	北京市2003年	北京市2005年	国家标准	欧洲1998	欧洲1999	世界燃油规范 II	世界燃油规范 III
1	硫 ≤	500ppm	350ppm	500 ppm/ 2000 ppm	500 ppm	350 ppm	300 ppm	30 ppm
2	十六烷值 ≥	49 (5#0#-10#)	51 (5#0#-10#)	45/49	49	51	53	55
		47 (-20#)	49 (-20#)					
		45 (-35#)	47 (-35#)					
3	多环芳烃 ≤		11			11	5	2
4	T95° C ≤	365	365		370	360	355	340
5	密度 kg/m <sup>3</sup>	810-850 (5#0#-10#)	820-845 (5#0#-10#)		820-860	820-845	820-850	820-840
		800-845 (-20#-35#)	800-840 (-20#-35#)					

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汽油主要指标对比 gasoline								
序号	项目	北京市 2003年	北京市 2005 年	国家标准 GB17930	欧洲 1998	欧洲 2000	世界燃 油规范II	世界燃 油规范 III
1	硫 ≤ sulfur	500ppm	150ppm	800 ppm	500 ppm	150 ppm	200 ppm	30 ppm
2	烯烃 olefens ≤	30%	25%	35%		18%	20%	10%
3	芳烃 ≤ aromatic s	40%	35%	40%		42%	40%	35%
4	烯烃+芳 烃 ≤ olefins+ aromatic s		60%					
5	苯 ≤ benzene	2.5%	1.0%	2.5%	5%	1.0%	2.5%	1.0%

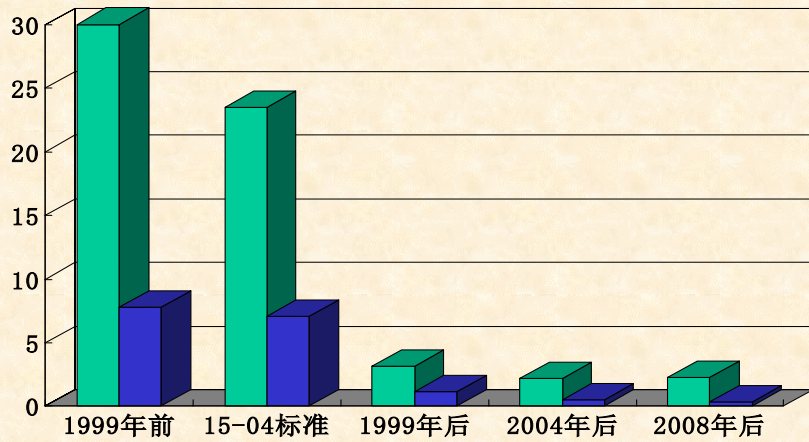
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正在制定的地方标准  
will be to set up the local standards in 2004

- 《储油库油气排放控制和限值》
- Vapor recovery for gasoline terminal storages
- 《油罐车油气排放控制和检测规范》
- Vapor recovery for transport gasoline vehicles
- 《加油站油气排放控制和限值》
- Vapor recovery for gasoline gasoline stations

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## 北京市机动车排放标准变化 the change of vehicle emission standard



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## 新车排放控制 new vehicles emission control

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## 新车排放控制 new vehicles emission control

- 建立环保车型目录
- Set up qualified vehicles catalogue in 1998
- 汽车生产企业按照标准和相关规定进行申报
- the manufacture who sale vehicles have to apply to Beijing EPB with test reports
- 汽车生产企业必须出具由环保总局认定的检测机构的检测报告
- the test reports must deliver by laboratory identified by CPA or Beijing EPB

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- 在7个新车年检场由市环保局派驻环保员审查新车的目录审查
- the engine and emission control system of vehicles saled on market have to consistent with tested one
- 审查车型、发动机、净化器、喷油器、喷油泵等关键部件
- signs and marking numbers of key parts(catalyst injector turbo charger should be inspected easily

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## 北京环保局对新车排放的抽查 Beijing EPB inspection

- 在市场上对新车行进生产一致性抽查
- Visual inspection: identified key parts
- 进行15工况法检测
- spot check the vehicles with test
- 如抽查不合格，停止在京销售新车的资格
- have problems stop the right of selling vehicle on market

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## 对在用车的排放控制 administration of vehicles in-use

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## 对在用车的排放控制 administration of vehicles in-use

- 绿色环保标志：欧1标准以上汽油车，欧3以上标准柴油车
- Green marks for euro1 gasoline vehicles and euro3 diesel vehicles
- 对绿标车每年检测一次，
- Once a year for vehicles at Euro1

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## 关于在用车的定期检测

### Inspection vehicles in-use at regular interval

- 黄色环保标志：其它车辆
- For others
- 对黄标车每年检测两次
- twice a year for others
- 对全部在用车使用简易工况法检测
- asm and lug down test

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## 关于在用车的定期检测

### Inspection vehicles in-use at regular interval

- 强化对年检场的日常管理
- Strictly administrate to test stations
- 对年检场实施数字监控和图象监控
- Monitor control to test stations with internet for digital and video
- 加大对违规年检场的处罚力度
- Seriously punish the illegal test in test stations

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## 关于在用车的定期检测

### Inspection vehicles in-use at regular interval

- 继续加大询查暗访力度
- Secretly inspect the test stations
- 2002年 处罚数家年检场
- Punished several test stations in 2002
- 2003年关闭三家年检场
- Close 3 test stations in 2003

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## 关于路检与限行

### Inspection vehicles in-use at roadside

- **2003年9月黄标车二环路三条大街限行**
- **Yellow mark vehicles limited in 3 streets to drive after September**
- **2003年11月黄标车不允许进入二环路（含二环路）**
- **Yellow mark vehicles no permit in 2th ring road to drive after November of 2003**
- **2004年将继续扩大限行范围**
- **Will enlarge areas for yellow mark vehicles in 2004**

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## 关于路检

### **Inspection vehicles in-use at roadside**

- 工作程序
- working procedure:
- 交警负责截车
- policemen stop vehicles
- 扣留驾照和车牌
- detain drive licensee and remove number plate
- 主要拦截冒烟车辆，到一、二类维修企业治理后进行简易工况法检测合格后领取驾照和车牌

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## 对外阜车辆的检测

### **Inspecting of nonlocal vehicles**

- 1999年起设立了14个进京检测站
- Set up 14 pass inspecting stations in 1999
- 四年共检测机动车170万辆
- test 1,700,000 vehicles
- 30万辆被劝返
- 300,000 vehicles over standards asked to return

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## 关于车辆的维护修理

### **Maintenance of vehicles**

- 全市共有五千多家修理厂
- Over 5000 repair workshops in Beijing
- 两千多家为一二类修理厂
- 2100 workshops qualified by BCB and EPB(274 grade 1 ,1826 grade 2 workshops identified by Beijing Communication Bureau)

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## 在用车改造

### **Retrofitting vehicles in-use**

- 1999-2000改造18.8万辆化油器车
- 188000 cars were retrofitted
- 3万辆使用液化气
- 30000 vehicles use LPG OR CNG
- 2000公交车使用天然气
- 2000 big buses use CNG

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## 北京市柴油车控制政策 control diesel vehicles

- 1999年治理大气污染第三阶段通告中要求公交柴油车退出长安街运营并逐步退出到三环路以外
- **ask diesel bus out of 3th ring road**
- 2000年治理大气污染第五阶段通告中要求对城八区柴油车实行总量控制，柴油车以旧换新
- **Total quantities control policy on Diesel vehicles ( eour 1or 2)**

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## 北京市柴油车控制政策 control diesel vehicles

- 考虑柴油车辆优缺点突出的特点。
- **Strong points in power and economic**
- 2001年鼓励生产使用低排放的车辆（欧3以上）。
- **Diesel vehicles (above eour 3)can use in downtown area**
- 在环保车型目录给予标注
- **mark in cataluage**
- 在城八区上牌照不受限制
- **no limited**

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## 北京市柴油车控制政策 control diesel vehicles

- 2002年要求公交柴油车首先使用低硫柴油350ppm以下,燕山公司特供
- **diesel bus used low sulfur fuel in 2002**
- 允许北京公交总公司试用160辆欧3柴油车
- **permit bus use some euro3 diesel vehicles**
- 北京公交车的发展方向是天然气车为主，欧3以上柴油车为辅
- **use CNG vehicles mainly and euro3 partly**

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## 特批的国3（相当于）欧3公交柴油车在三环路上 The euro 3 diesel bus for special permit



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## 北京市柴油车控制政策 control diesel vehicles

- **2003**年在治理大气污染第九阶段通告中要求燃油生产部门向全市供应低硫柴油
- **all diesel vehicles use low sulfur fuel in 2003**
- 欧3以上柴油车发绿色环保标志，不受行驶限制
- **green mark for euro 3 diesel vehicles**

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## 北京市柴油车控制政策 control diesel vehicles

- 设立122举报冒黑烟柴油车热线
- **set up hot line for black smoke vehicles**
- 路检队重点检查冒黑烟车辆
- **focus on smoking vehicles**
- 加严简易工况法标准限值，使老旧柴油车一次上线检测合格率仅有50%，使之加强维修保养
- **strict cutpoint for old diesel vehicles**

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●加强机动车路检路查

●Policeman stop smoking vehicle



超标车辆摘牌



货运车冒黑烟

◆加强对上路行驶机动车的路检和巡查

◆对高排放的载货车、公交车等开展专项检查

◆加强了外地进京车辆的尾气排放检查

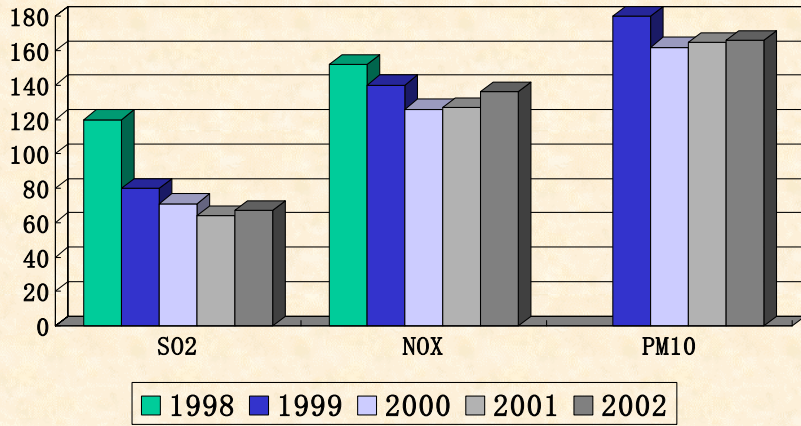
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机动车检测场检测重型柴油车  
Diesel vehicle in lug-down test



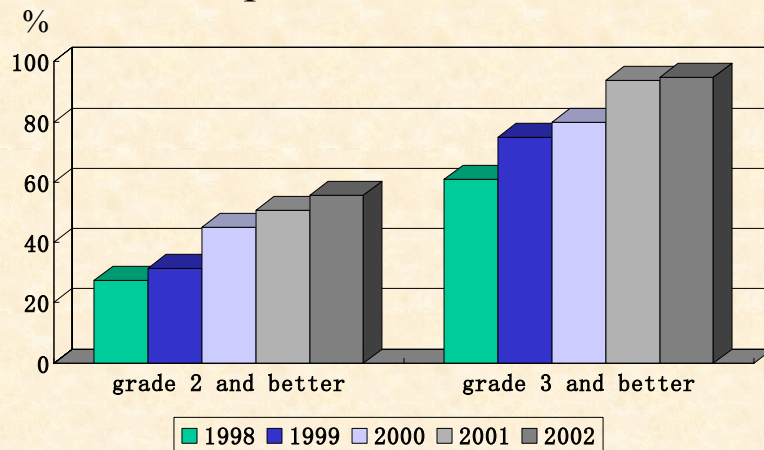
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污染物浓度变化情况  
change of pollutant concentration



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污染指数变化情况  
pollutant index



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## 面临的问题 Face problems

- 燃油质量问题
- Fuel quality
- 机动车报废标准与政策
- retire vehicles
- 检测设备的认证与管理
- certificate test equipments for vehicles

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## 燃油问题 Fuel quality

- 《车用无铅汽油》（GB17930—2000）只是适应欧1排放车使用
- Nolead gasoline for vehicle(GB17930-2000) only for euro 1 vehicles
- 建议尽快制定适合欧2欧3车辆的国家汽油标准
- Suggest to make gasoline of national standards for euro2 and euro3 vehicles as soon as possible
- 优质优价
- Better quality higher price

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## 燃油问题 Fuel quality

- 无车用柴油标准
- No diesel fuel standard
- 建议尽快制定适合欧2欧3柴油车辆的国家柴油标准
- Suggest to make diesel fuel of national standards for euro2 and euro3 vehicles as soon as possible
- 优质优价
- Better quality higher price

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## 燃油问题 Fuel quality

- 汽油清净剂
- Gasoline detergents
- 柴油清净剂
- Diesel detergents
- 清净剂的检查
- Check detergents

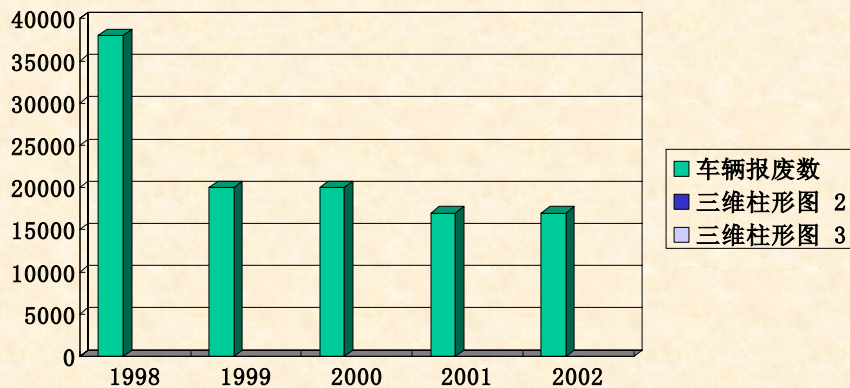
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## 关于机动车报废 Vehicles retirement

- 1998年报废3.8万辆
- Retire 38,000 in 1998
- 1999年报废2万辆
- Retire 20,000 in 1999
- 2000年 报废2万辆
- Retire 20,000 in 2000
- 2001年报废1.7万辆
- Retire 17,000 in 2001
- 2002年报废1.7万辆
- Retire 17,000 in2002

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## 机动车报废趋势 Vehicles retirement



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## 关于机动车报废 Vehicles retirement

- 制定鼓励提前报废车辆政策
- Encourage vehicles retirement
- 加征燃油税
- Receive fuel tax
- 允许地方制定车辆报废标准
- Permit local government set up vehicle retirement policy