

Case Study of China Vehicle Emission Test Under Load

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Why does China need New Emission Test ?

2

How does this System work effectively?

3

Interest Points of in its implementation

AIR POLLUTION IN CHINA

*In 2005 , GDP of China was 1850 billions USD, ranked 6th of the World.
Total Air Pollutants(SO₂/NO/CO...) were 359 mil. tons,
China was the most polluted country on the planet!*

Data used from: data.stats.gov.cn

Need of Improvement for Air Emission

Poor Air Quality

Only 1.4% of GDP for E.P Improvement method,
>29.5 days /year of SMOG in 2005

Severity of Pollution

Continual Dev.

Policy by Government privileges Environment Protection than GDP.
2008 Beijing Olympic.

Policy Orientation

Infrastructure Status:

Technical conditions was backward,
Ex. Old tech. engine lack of purification, etc.

Technical Situation

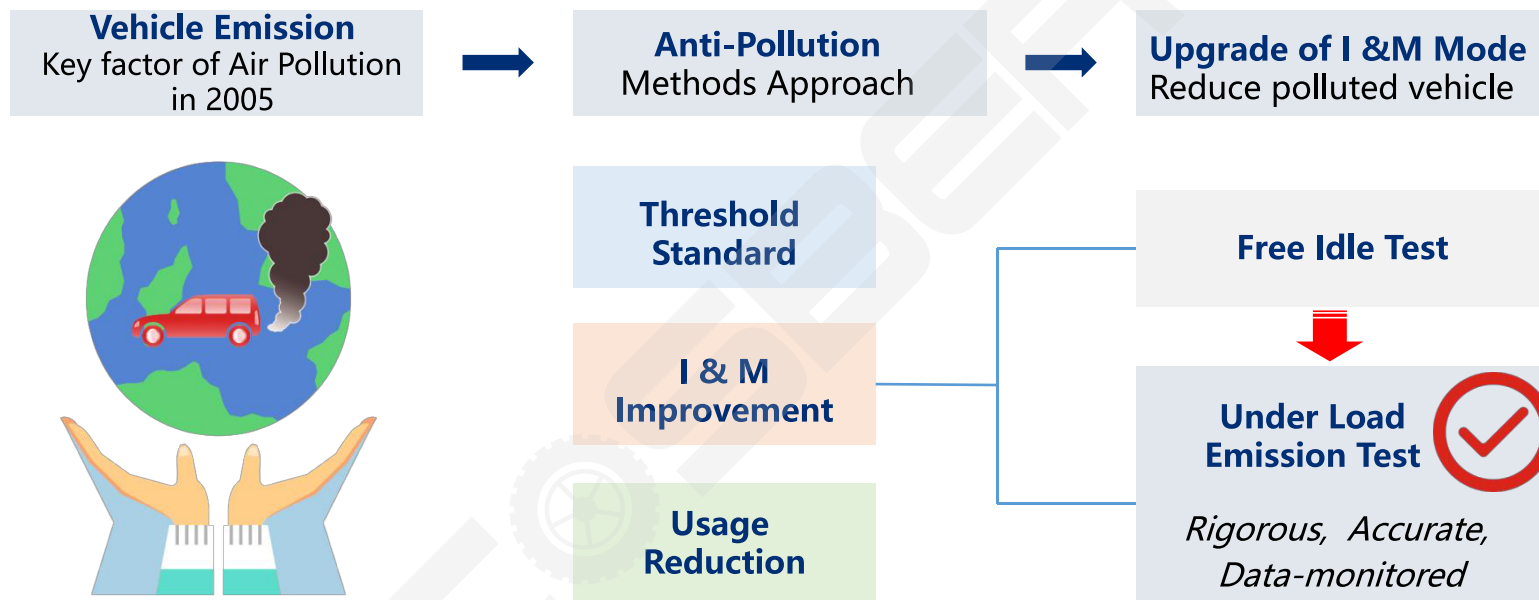
Conscience of Population:

living conditions need to be improved

People Mind

More Vehicle Anti-pollution methods to be applied...

Stricter Regulation for Vehicle Emission Control



Petrol tax & grade, Car standard, Matriculation limit ...
Multiple-methods working in the same time

Free Idle Test & Under load Emission test



Free idle Test was used before 2008

VS



Under load Emission Test starts from 2008

China Under Load mode: 2008-Now...



- Reduce of **30%** of Polluted Vehicles.
- 8 year (08-15) GDP increased **120%**, but Air Pollutants reduced **15%**.

How this system works Effectively: Modes & Composition

ASM	Gasoline Vehicle Steady-State test mode
VMAS	Gasoline Vehicle Transient State test mode
LUGDOWN LDV	Diesel Light Duty Vehicle Lug down test mode
LUGDOWN HDV	Diesel Heavy Duty Vehicle Lug down test mode

3 Main parts of ASM System:

1

Chassis Dynamometer

2

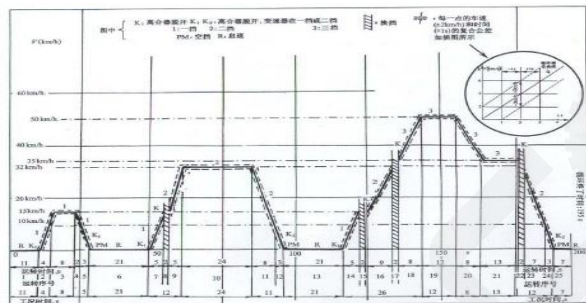
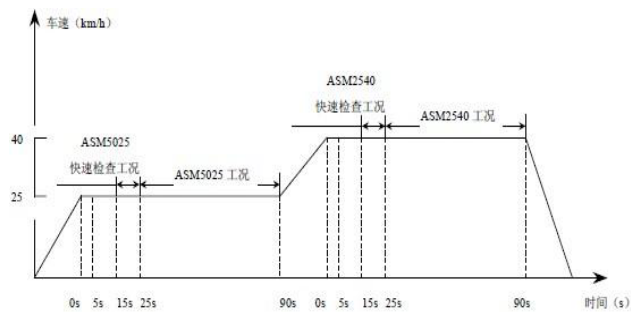
Tailpipe exhaust Measurement Device (Gas Ana & Opa.)

3

Computer Control System



Load Simulation Process rationality: ASM Vs V MAS



Problem of Old Diesel Engine : 1 Diesel pollution = 200 Gasoline !



LUG DOWN Test Process for Diesel



2 key steps for Diesel Lugdown test:

1

Wheel HP Test / Nominal Engine HP > 50%

2

Opacity @ loaded 80%, 90% & 100% of WHP.
With constant RPM & Temperature

China pays serious Attention in Treatment of Diesel Emission...

Flexible Implementation City by City, Step by Step



There are 16 Chinese cities with Vehicle population of more than **2 millions**. The Year of Starting the Under load Emission test City by City:

Beijing(5.4 million Vehicles) -- 2008
Shenzhen(3.7 million Vehicles) -- 2011
Guangzhou (2.3million Vehicles) – 2011
Chengdu(3.7 million Vehicles) -- 2014
Shanghai(2.8 million Vehicles) -- 2016

★ Beijing Capital ● Vehicle inspection stations
● Provinces with more vehicle inspection stations



Interest Points: “ Anti-fraud Probing”

Prevention by sensors Program:

1. Gasoline prevention: **CO+CO2 > 6%**
2. Diesel Prevention: **Exhaust Temperature check**



COSBER contributes to the Clean & Beautiful Sky

We offer a complete solution in Vehicle Emission test , more than 500 units of Under Load Emission Test equipments were provided to our customers...



Further Information and Contact

- Further Information, Presentations and Video about COSBER the topic:
Case study of Chinese Under Load Emission test
are available on the USB-Stick which are added in the CITA-Conference bags
- Contact:
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Thank you for your time!

