China’s Clean Diesel Programs

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National Actions to Reduce Emissions from Heavy-duty Vehicles
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Contents

- The issue
- Historical programs
- Clean Diesel National Action Plan
The Issue

- Transportation, especially diesel sectors are blamed for the severe air pollution in many Chinese cities.

Annual ave. PM2.5 and 6-month ave. ozone concentration in 2015
Historical overview of diesel emission control programs in China

Revision of Clean Air Law

- 2000
  - HDV China I
  - Non-road China II

- 2001
  - Diesel fuel China I

- 2002
  - 2003
  - HDV China II

- 2004
  - I/M program

Air Pollution Prevention and Control Action Plan

- 2009
  - Emission labeling
  - Yellow label scrappage
  - NEV subsidy

- 2010
  - Diesel fuel China III

- 2011
  - China Green Freight Initiative

- 2012
  - HDV China IV
  - HDV OBD standard

- 2013
  - 2014

13th Five-Year Plan
- Ban on trucking coal to ports
- Diesel fuel China V
- HDV China V

- 2015
  - New Clean Air Law

- 2016
  - 2017
  - Supplemental PEMS standard
  - Remote sensing standard

Three-year Action Plan on defending Blue Sky
- Promotion of urban electric buses and trucks
- Diesel fuel China IV
- Non road China III

Clean Diesel Action Plan
- Diesel fuel China VI
- Remote OBD

Three-year Action Plan for Promoting the Adjustment of Transport Structure
- HDV China VI

Three-year Action Plan for Marine DECA
- Non road China IV
- Diesel fuel China V
## Macro policies/Plans

<table>
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<th>Year</th>
<th>Policy</th>
<th>Highlights</th>
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<tbody>
<tr>
<td>2000</td>
<td>Revision of Clean Air Law</td>
<td>Gave MEP authority to set emission standards</td>
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<tr>
<td>2012</td>
<td>12th Five-Year Plan for National Environmental Protection</td>
<td>2011-2015 High-level plan. Focused on NOx emission control</td>
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<tr>
<td>2013</td>
<td>Air Pollution Prevention and Control Action Plan</td>
<td>2013-2017 Focused on air quality improvement covering all emission sources</td>
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<tr>
<td>2016</td>
<td>New Clean Air Law</td>
<td>Gave MEP clear authority to enforce and penalize non-compliance</td>
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<td>2017</td>
<td>13th Five-Year Plan for the Development of National Environmental Protection Standards</td>
<td>2016-2020 Listed environmental standards to be published or revised</td>
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<td>2018</td>
<td>Three-year Action Plan on defending Blue Sky</td>
<td>2018-2020 Actions to reduce air pollutants/GHG emissions and improve air quality</td>
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<td>2018</td>
<td>Three-year Action Plan for Promoting the Adjustment of Transport Structure</td>
<td>2018-2020 Actions to raise logistics efficiency</td>
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<td>2018</td>
<td>Action Plan for Battle against Diesel truck emissions</td>
<td>2018-2020 Actions to reduce diesel emissions</td>
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Starting from China V fuel standards, diesel sulfur limit has been set at <10ppm.

- Sulfur limits for onroad and nonroad diesel fuels are harmonized.
- China VI fuel standard further align with those in California and have tightened PAHs.
New HDV emission standards

China VI
• Combines best practices from European and U.S. regulations such as US OBD, EU’s PN limits
• Used more realistic driving cycles;
• Extended vehicle useful life for durability requirements;
• Adopted real-world emission testing for in-use conformity
• Require real-time reporting of emission control functionalities (called remote OBD) on new vehicles starting from 2023 (6b), a first in vehicle regulation across the globe.
Clean Diesel Action Plan 2018-2020

TARGETS

- Compliance rate of in-use diesel vehicle should reach 90% nationwide and 95% in key regions.
- Compliance rate of diesel fuel and urea quality should reach 95% nationwide and 98% in key regions.
- Rail freight volumes should be increased by 30% compared to 2017.

PROGRAMS

- Clean fuel
- Clean diesel trucks
- Clean diesel engines
- Clean freight transportation

KEY REGIONS

Beijing, Tianjin, Hebei, Shanxi, Shandong, Henan, Shanghai, Jiangsu Province, Zhejiang Province, Anhui Province, Shaanxi Province, and Inner Mongolia Autonomous Region (Hohhot, Baotou, Wulanchabu, Erdos, Bayannaoer, Wuhai.)

Clean Diesel Action Plan 2018-2020

- Truck System
- Engine
- Fuel
- System
Clean Diesel Action Plan 2018-2020

- Early implementation of China VI
- Retire 1 million pre-China IV vehicles
- Tighten I/M program, ensure repairs
- Ensure compliance with roadside and onsite inspections, remote sensing and remote OBD

Emission contribution by certified standard

Foshan’s remote sensing for catching high emitters

Remote sensing network in N. China
Clean Diesel Action Plan 2018-2020

- Ensure compliance of fuel sulfur standards by establishing a supply-chain supervision program for diesel fuel and urea, strengthen random checks at retail stations and from vehicles, and carry out special campaigns against violating fuel stations (usually illegal, private stations)

Close down illegal, private fueling stations and tanks
Clean Diesel Action Plan 2018-2020

- Ban bulk commodity shipment by diesel trucks in key ports.

- Promote new energy and clean energy vehicles; By 2020, 80% of new urban commercial fleets (buses, sanitation trucks, postal vehicles, taxis and commuting coaches) in key regions should be new energy.
Clean Diesel Action Plan 2018-2020

- Ensure implementation of China IV off-road emission standard by 2021
- Establish engine registration and tracking system
- Real-time monitoring required on all new engines since 2020
- Establish low emission zones for off-road equipment
Thank you!

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