

Fuel Economy Standards in China: Status and Challenges

WANG Zhao
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Bangkok

中国汽车技术研究中心
China Automotive Technology & Research Center

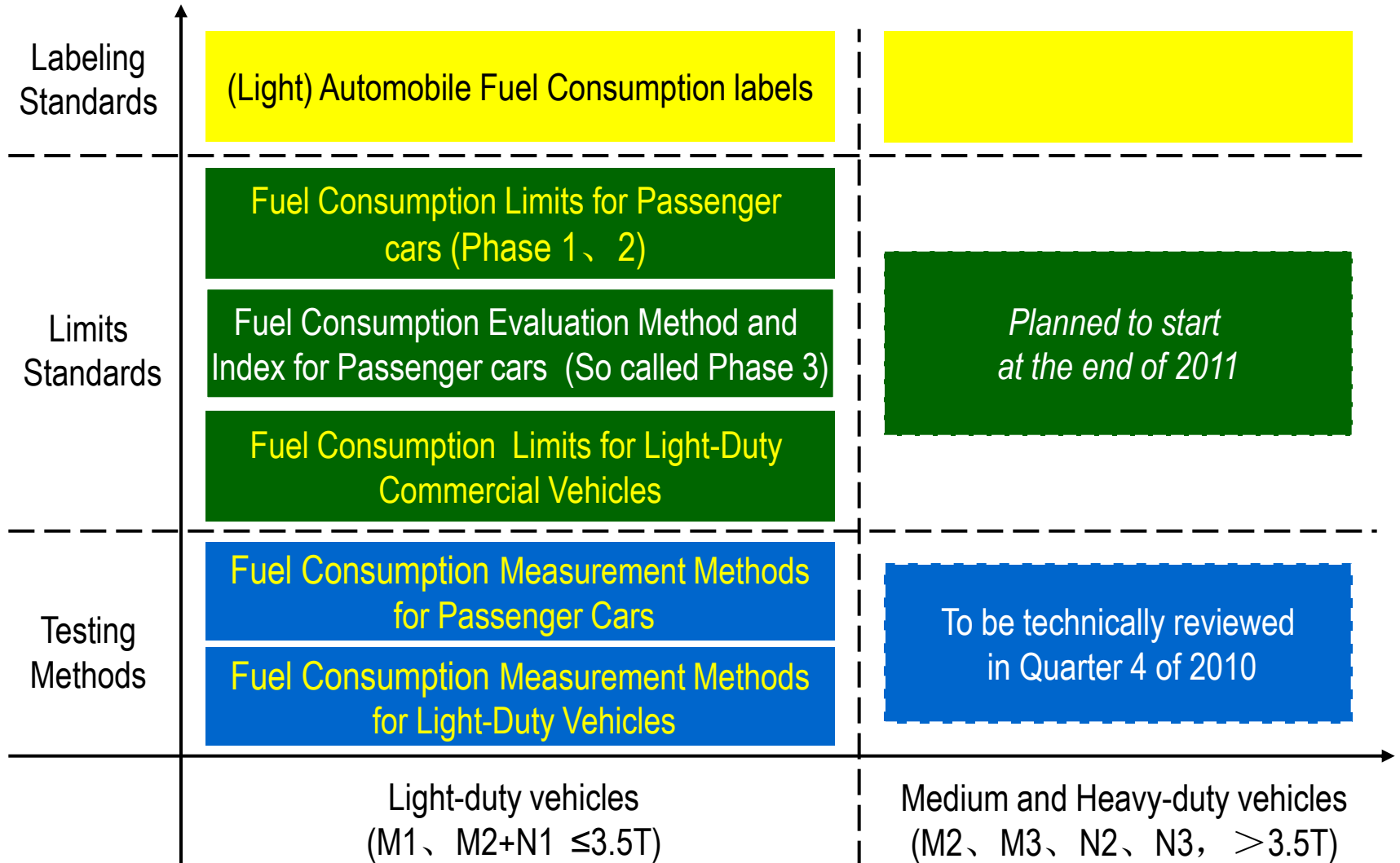
- Vehicle stock increases dramatically
 - ▣ China became the largest auto producer and market in 2009
 - Production volume amounting to 13.79 M, 48.3% up than 2008
 - Sale volume amounting to 13.79 M, 48.3% up than 2008
- China's oil supply depends increasingly on import from other countries
 - ▣ More than 200 million tons of oil import in 2008 (equivalent to 1,717 million barrels), nearly 52% of total oil consumption in China in the same year
- Transport sector accounts for nearly 50% of total Chinese gasoline consumption
 - ▣ Motor vehicles contribute to the majority of oil consumption increase now and in the future

Fuel consumption by vehicles will be a heavy economic and social burden for China on energy supply and conservation.

Status-Automotive Fuel Economy Standard System



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- Measurement methods of fuel consumption for light-duty vehicles (GB/T 19233-2008)
 - ▣ Requirements for the type approval test and COP
 - ▣ Test on NEDC cycle at the same time with emissions measurement
- Measurement methods of fuel consumption for automobiles-
Part 1:Measurement methods of fuel consumption for passenger (GB/T 12545.1-2008)
 - ▣ Not use for type approval
 - ▣ Fuel consumption adjustment based on mileage metrics
- Commercial vehicle-Fuel consumption test method (GB/T 12545.2-2001)

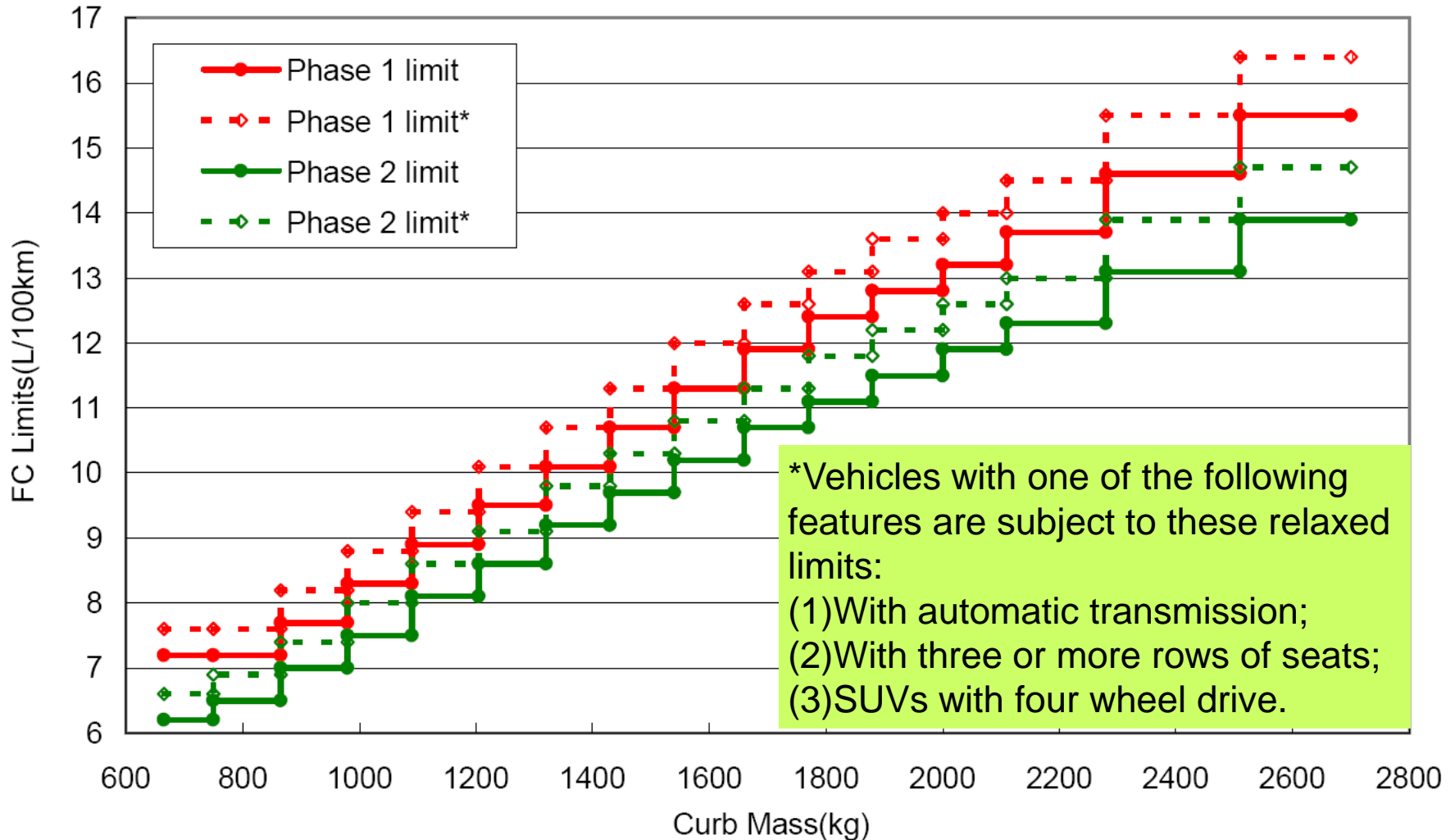
- Limits of fuel consumption for passenger cars (GB 19578-2004)
 - ▣ The first compulsory National Standard in automotive energy-saving
 - ▣ Classifying the vehicles into 16 groups by curb mass
 - ▣ Setting uniform limit for vehicles of the same mass group
 - ▣ Phase-in enforcement by two steps
 - Phase 1 limits took effect on July 1st 2005 for newly approved vehicle models and on July 1st 2006 for vehicle models already in government registry;
 - Phase 2 limits took effect on January 1st 2008 for newly approved vehicle models and on January 1st 2009 for vehicle models already in government registry.

Status-FC limits for passenger cars

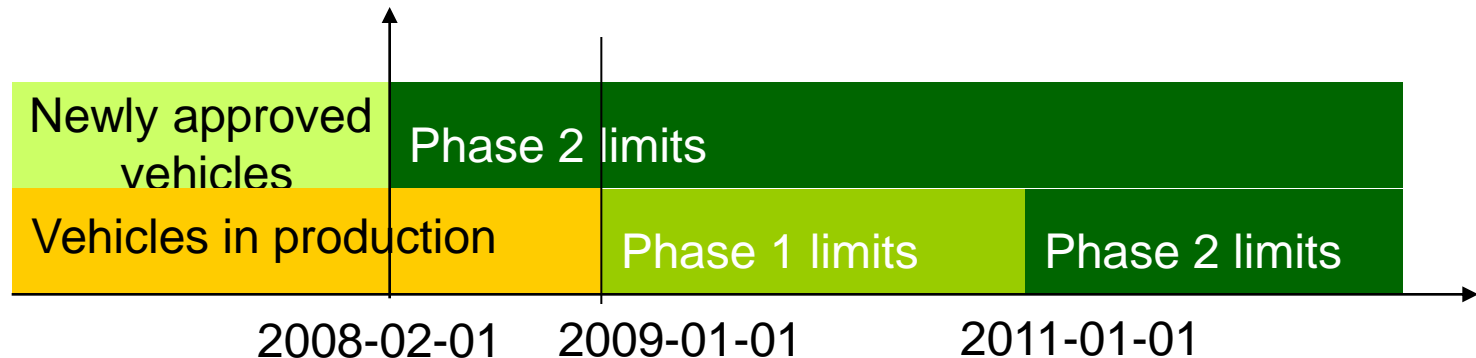


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Phase 1 and 2 Fuel Consumption Limits



- Limits of fuel consumption for light duty commercial vehicles (GB 20997-2007)
 - ▣ Covering N₁ M₂ vehicles with GVW ≤ 3.5 t, except for special work vehicles
 - ▣ Fuel consumption limits based on vehicle contributes
 - Max. Design Total Mass (GVW)+ Engine Displacement
 - ▣ Differential limits based on fuel type and use of vehicles
 - Loosen requirements for diesel vehicles and smaller vehicles
 - Loosen requirements for vehicles with special structures (vans and tank vehicles of category N1, AT vehicles, and AWD vehicles)



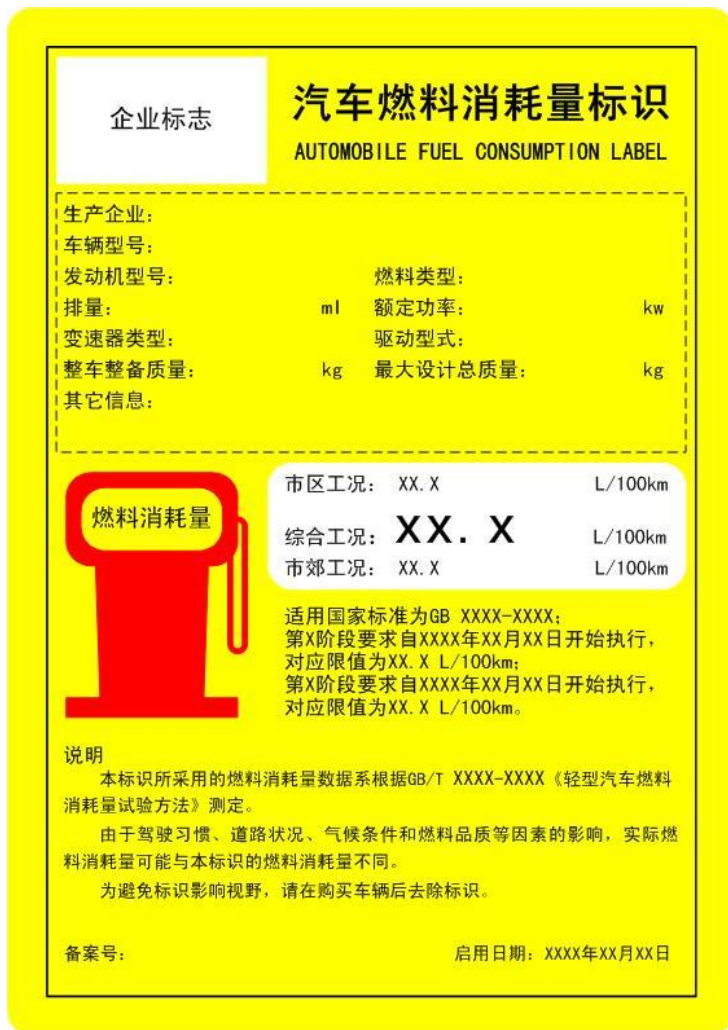
- Automobile fuel consumption labels (GB 22757-2007)
 - Minimum information displayed on the label
 - Size(A4/5) and format of the label
- “Fuel consumption labeling administrative rule for light duty vehicles”
 - Issued by MIIT in order to strengthen standard enforcement
 - Covering all vehicles with $GVW \leq 3.5$ t
 - Requiring specified vehicles for sale to be equipped with a label

 - MIIT issues fuel consumptions of all vehicles with $GVW \leq 3.5$ t on its website monthly.

Status-Fuel consumption label



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Manufacture's LOGO and Label title

Manufacture's name and Vehicle characteristics

Urban, suburban, and combined fuel consumption

Applicable fuel consumption limits

Related explanations

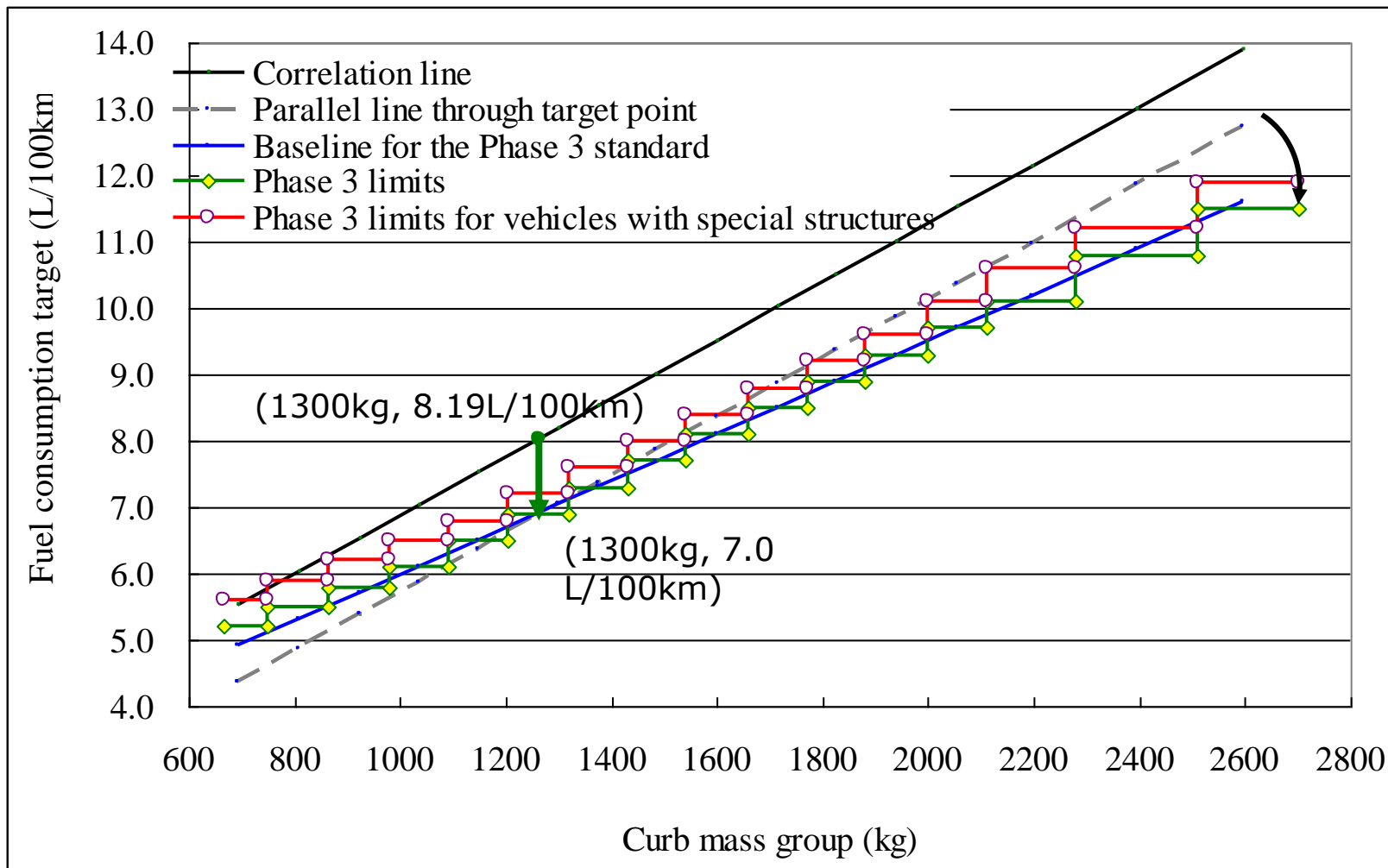
- Fuel consumption evaluation methods and targets for passenger cars
 - Overall targets of 7L/100km for passenger vehicles in 2015
 - Phase 2 limits as the minimum requirements for market admission
 - Evaluation by fuel consumption targets, instead of limits for individual vehicle
 - Introducing the concept of corporate average fuel consumption
 - Phased-in enforcement with manufacturer as evaluation target

Subsidy for purchase of so-called energy-saving vehicles:

-With a displacement not more than 1.6L, and

-Achieving the Phase 3 fuel consumption targets in advance.

Latest developments-Passenger cars



- Leading time from 2012-2014 with CAFC requirement more and more stringent

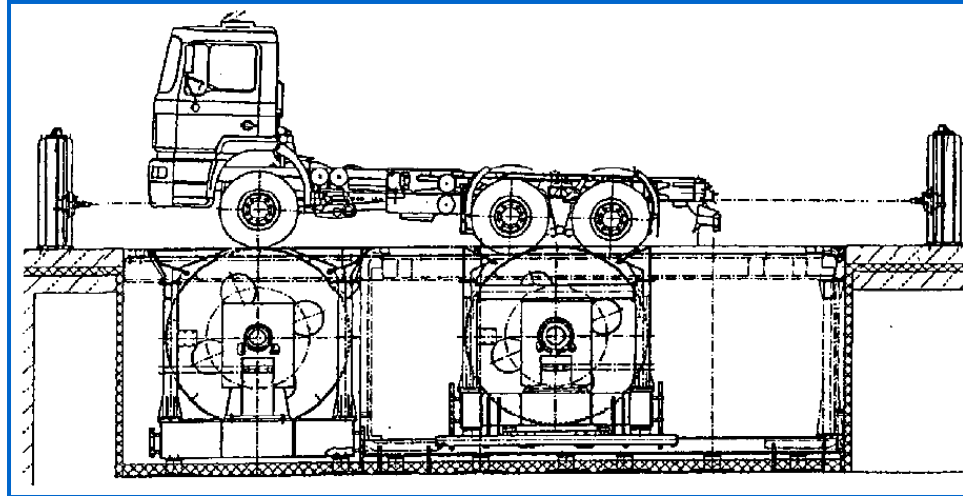
Model Year	Transitional CAFC Targets as % of Phase 3 CAFC Targets
2012	109%
2013	106%
2014	103%
2015 and after	100%

Submitted to the government for approval and issue.

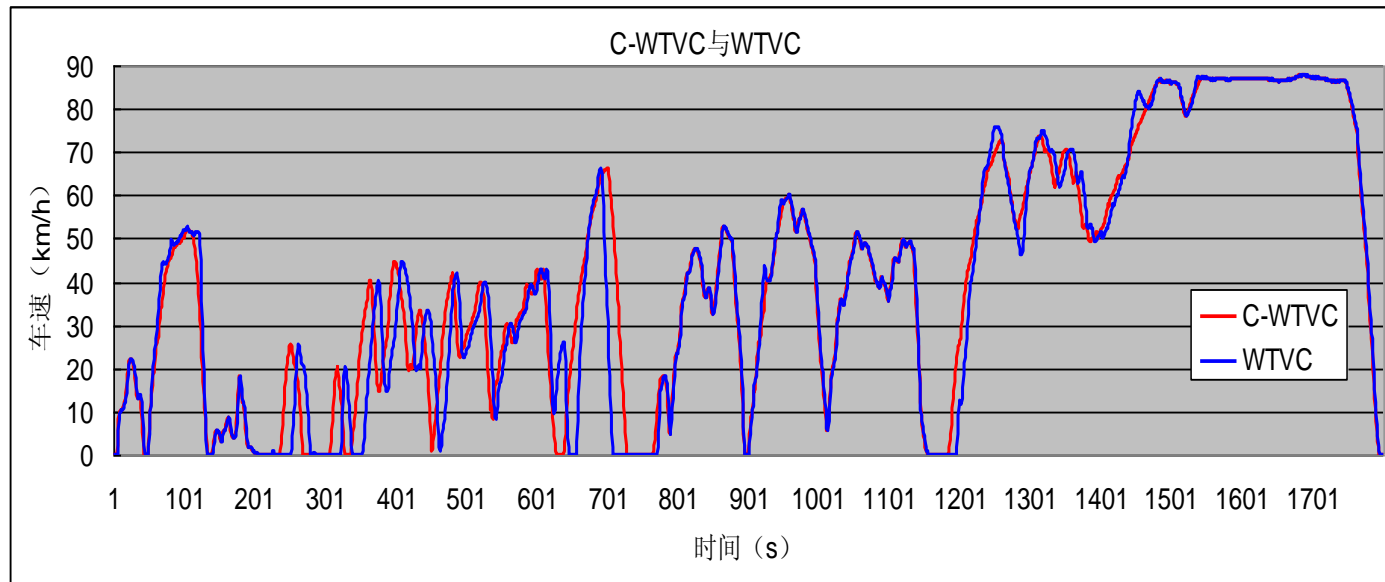
Latest developments-Medium and Heavy vehicles

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- Parallel measurement methods
 - Real vehicle test on dynamometer
 - Simulation measurement by computer

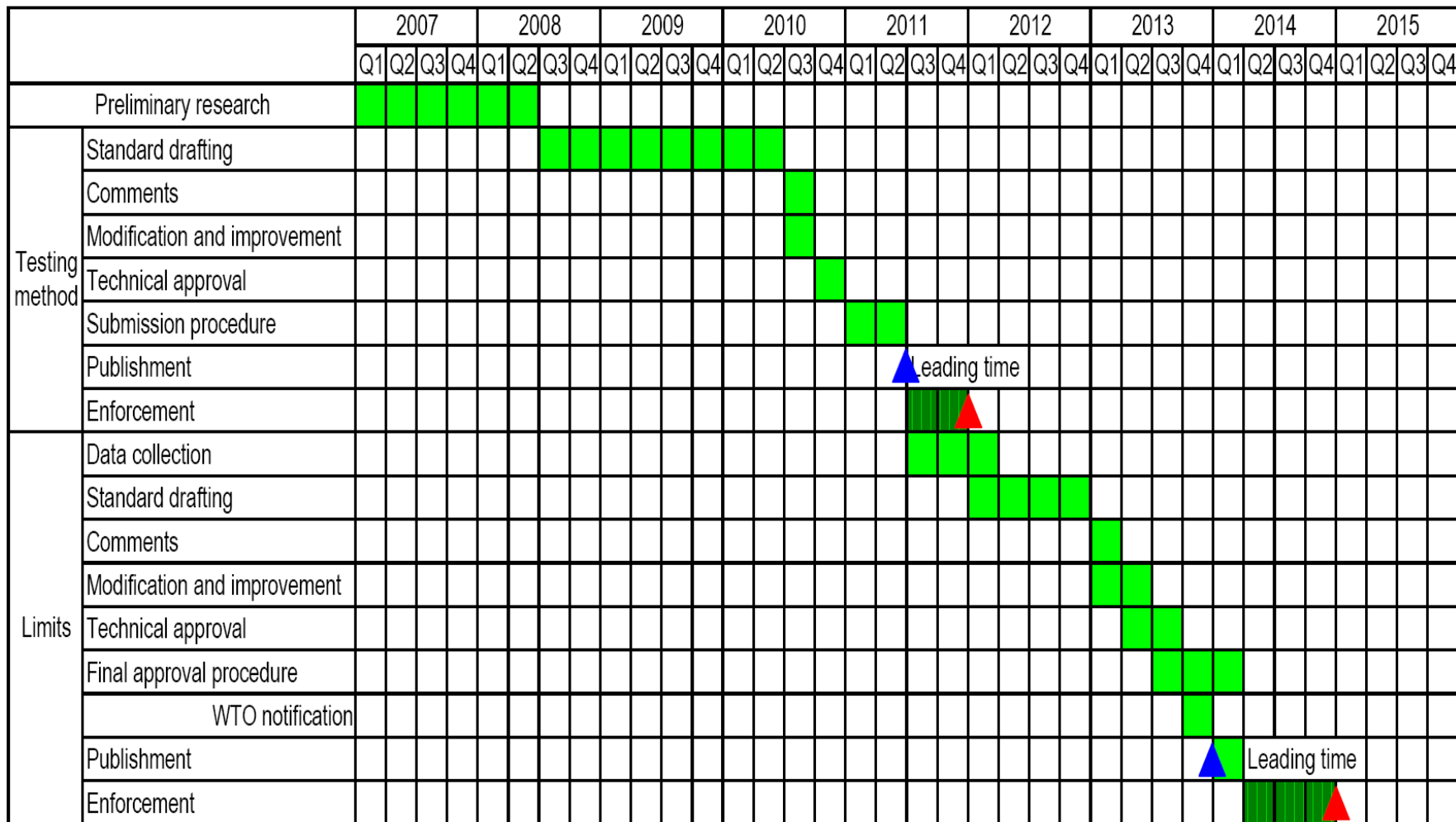


- C-WTVC by adjusting accelerations, decelerations, and shares of mileage in WTVC cycle on the basis of traffic conditions, vehicle characteristics, and driving behaviors in China.



- Mileage metrics on the basis of traffic investigation

Latest developments-Medium and Heavy vehicles



- Challenges
 - ▣ Continuous rapid increase in vehicle stock in future
 - ▣ Relatively low fuel economy of vehicles
 - ▣ Lacking in Chinese own driving cycles
 - ▣ Large gap between real fuel consumption and testing result
- Following tasks
 - ▣ To set up Corporate Average Fuel Consumption reporting, computing, and monitoring system
 - ▣ To implement fiscal measures based on fuel economy
 - ▣ To develop Chinese own typical driving cycles

谢谢！ 请指正！

Thank you for your attention!

WANG Zhao

59th P.Box, 300162, Tianjin, China

Tel: 0086-022-84771502

E-mail:wangzhao_sd@126.com

王兆

地址：天津市59号信箱 300162

电话：0086-022-84771502

电邮：wangzhao_sd@126.com