Fuel Economy Standards in China: Status and Challenges

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Backgrounds



- 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 Systemmer



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Labeling Standards	(Light) Automobile Fuel Consumption labels	
	Fuel Consumption Limits for Passenger cars (Phase 1、2)	
Limits Standards	Fuel Consumption Evaluation Method and Index for Passenger cars (So called Phase 3)	Planned to start at the end of 2011
	Fuel Consumption Limits for Light-Duty Commercial Vehicles	
Testing	Fuel Consumption Measurement Methods for Passenger Cars	To be technically reviewed
Methods	Fuel Consumption Measurement Methods for Light-Duty Vehicles	in Quarter 4 of 2010
	Light-duty vehicles (M1、M2+N1 ≤3.5T)	Medium and Heavy-duty vehicles (M2、M3、N2、N3, >3.5T)



- 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 energysaving
 - 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





Status-FC limits for light commercial vehicles



Limits of fuel consumption for light duty commercial vehicles (GB 20997-2007)

- Covering $N_1 M_2$ 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)

Newly approved vehicles	Phase 2	limits	
Vehicles in produ	ction	Phase 1 limits	Phase 2 limits
2008-(02-01 20	009-01-01 20	11-01-01



- □ 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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企业标志	汽车燃料消耗量 AUTOMOBILE FUEL CONSUMP	量标识 TION LABEL
生产企业: 车辆型号: 发动机型号: 排量: 变速器类型: 整车整备质量: 其它信息:	燃料类型: ml 额定功率: 驱动型式: kg 最大设计总质量:	kw
燃料消耗量	市区工况: XX.X 综合工况: XXX.X 市郊工况: XX.X	L/100km L/100km L/100km
U	适用国家标准为GB XXXX-XXXX; 第X阶段要求自XXXX年XX月XX日 对应限值为XX.X L/100km; 第X阶段要求自XXXX年XX月XX日 对应限值为XX.X L/100km。	开始执行, 开始执行,
说明 本标识所采用的燃料 消耗量试验方法》测定。 由于驾驶习惯、道路 料消耗量可能与本标识的 为避免标识影响视野	消耗量数据系根据GB/T XXXX-XXXX《 Y状况、气候条件和燃料品质等因素的 燃料消耗量不同。 ,请在购买车辆后去除标识。	《轻型汽车燃料 ^的 影响,实际燃
备案号:	启用日期: X	XXX年XX月XX日

Manufacture's LOGO and Label title

Manufacture's name and Vehicle characteristics

Urban, suburban, and combined fuel consumption

Applicable fuel consumption limits

Related explanations

Latest developments-Passenger cars

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- 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



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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



Latest developments-Medium and Heavy vehicles

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 vehicle

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			20)07			20	80(20)09		2010					2011				2012				2013				20)14	14		20	J15	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q.	3 Q/	1 Q1	Q2	2Q3	3 Q 4
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Challenges and following tasks



Challenges

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- 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!

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