

Overview of policies related to low carbon transportation in China

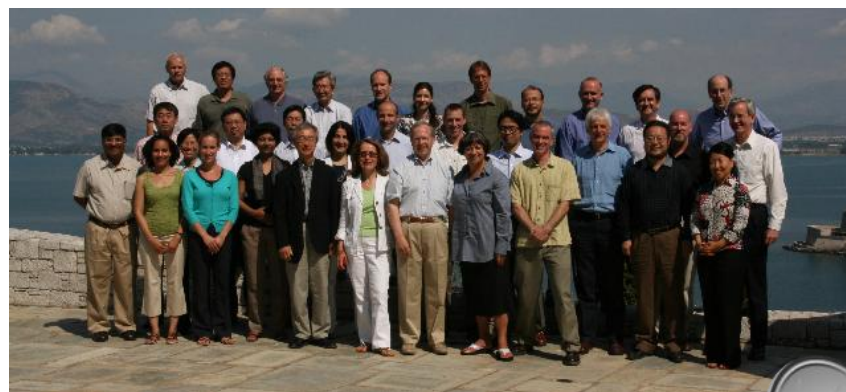
LowCVP Annual Conference, June 9, 2011, London

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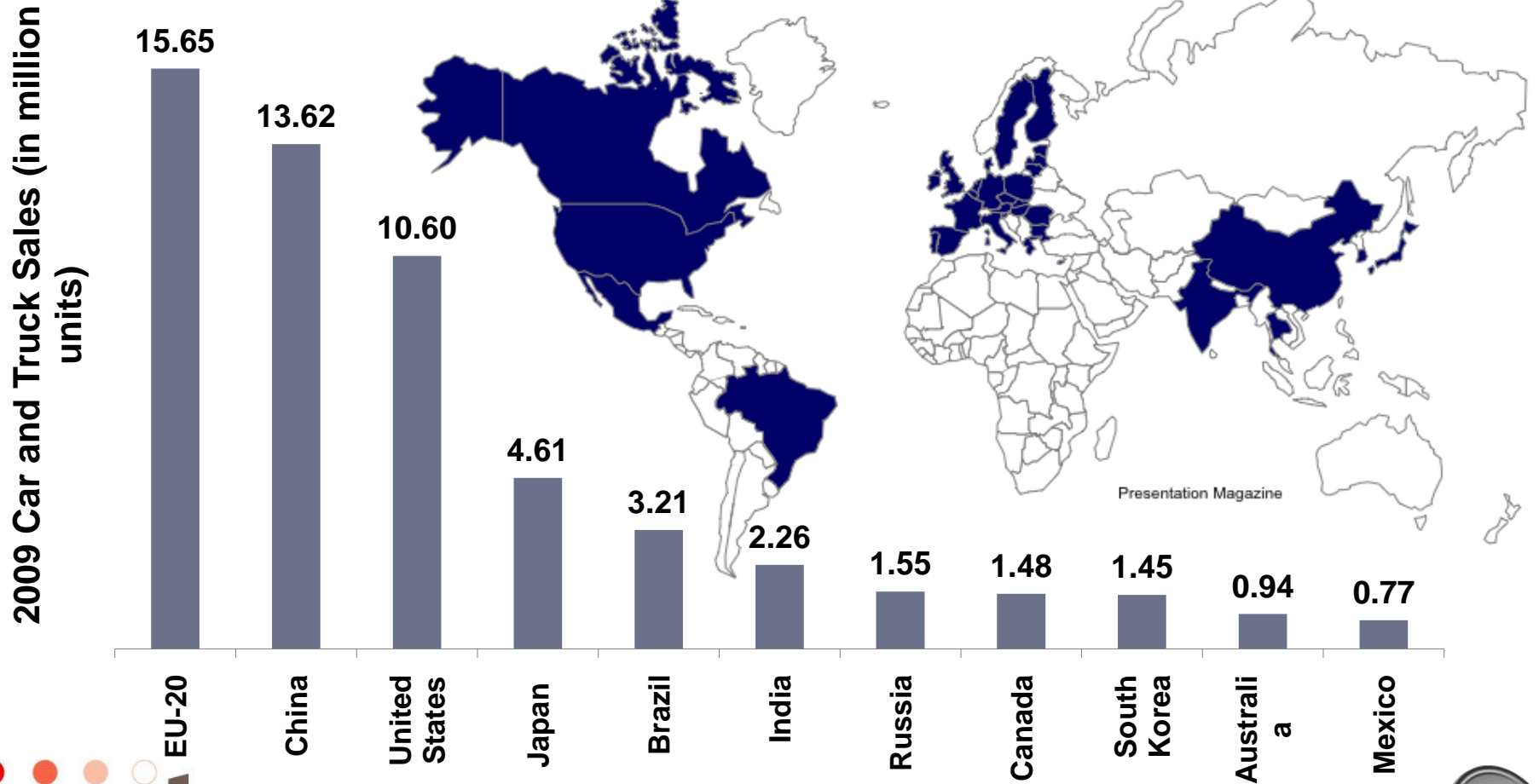
- Goal of the ICCT is to dramatically reduce conventional pollutant and greenhouse gas emissions from all transportation sources in order to improve air quality and human health, and mitigate climate change.
- Promotes best practices and comprehensive solutions to:
 - ☑ Improve vehicle emissions and efficiency
 - ☑ Increase fuel quality and sustainability of alternative fuels
 - ☑ Reduce pollution from the in-use fleet, and
 - ☑ Curtail emissions from international goods movement.
- The Council is made up of leading regulators and experts from around the world.



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Overview of policies in China

- National carbon intensity reduction goal
- Fuel consumption standards for new vehicle fleet
 - Passenger cars
 - Light commercial vehicles
 - Progress of for Heavy duty vehicles standard
- Vehicle fuel consumption labeling
- Vehicle fiscal policies
- New energy vehicle plan and incentives
- Local measures



National carbon intensity reduction goal

- China has committed to reduce 40-45% carbon intensity (CO₂ emissions per GDP) by 2020 from the 2005 baseline at the Copenhagen climate summit.
- Phase in schedule:
 - 2006-2010: 19% (achieved)
 - 2011-2015: 17% (planned in the 12th Five Year Plan)
- However, this target breaks down by regions instead of sectors.
- Enforcement agency: NDRC

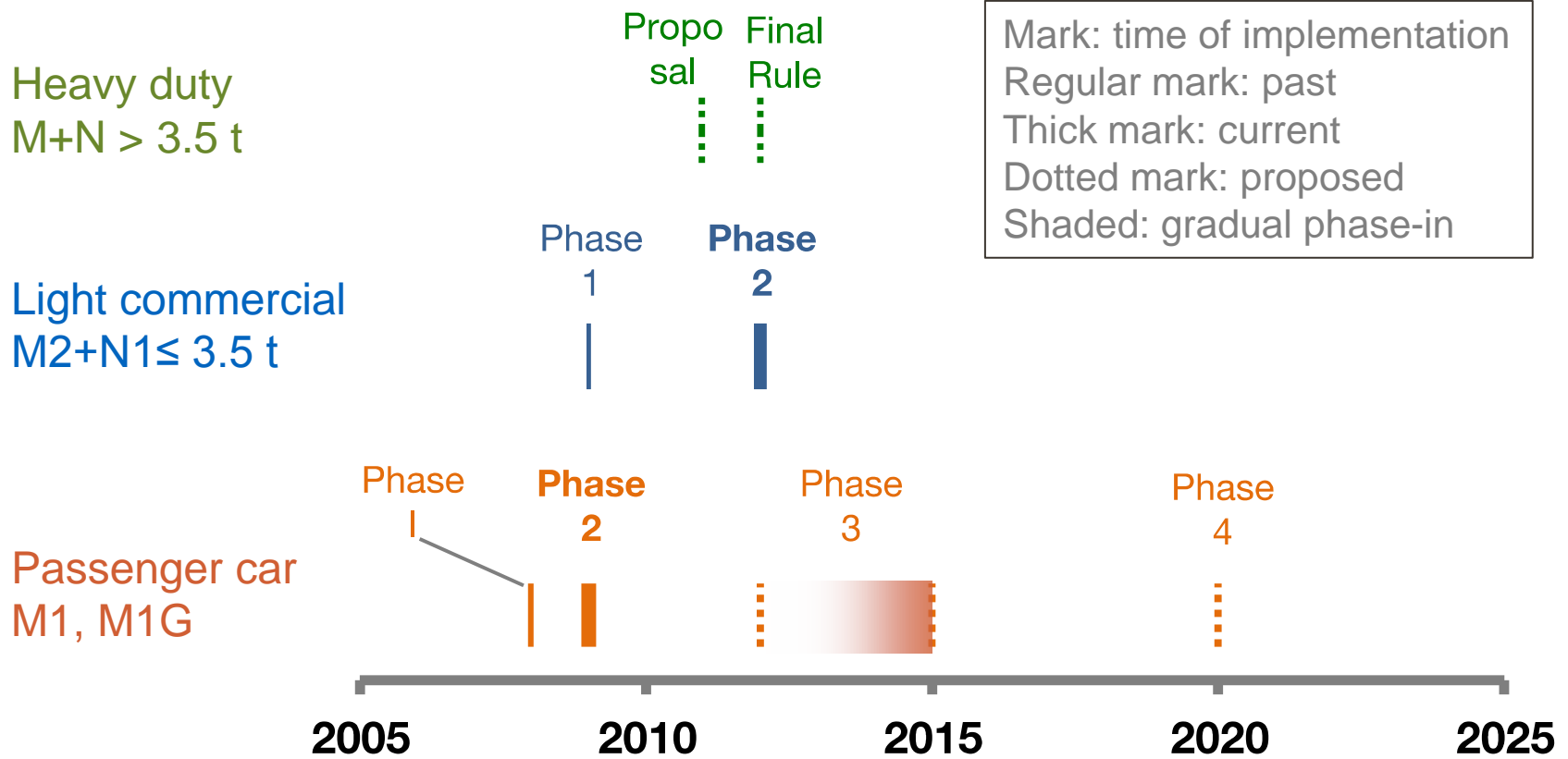


China's auto industry and energy consumption

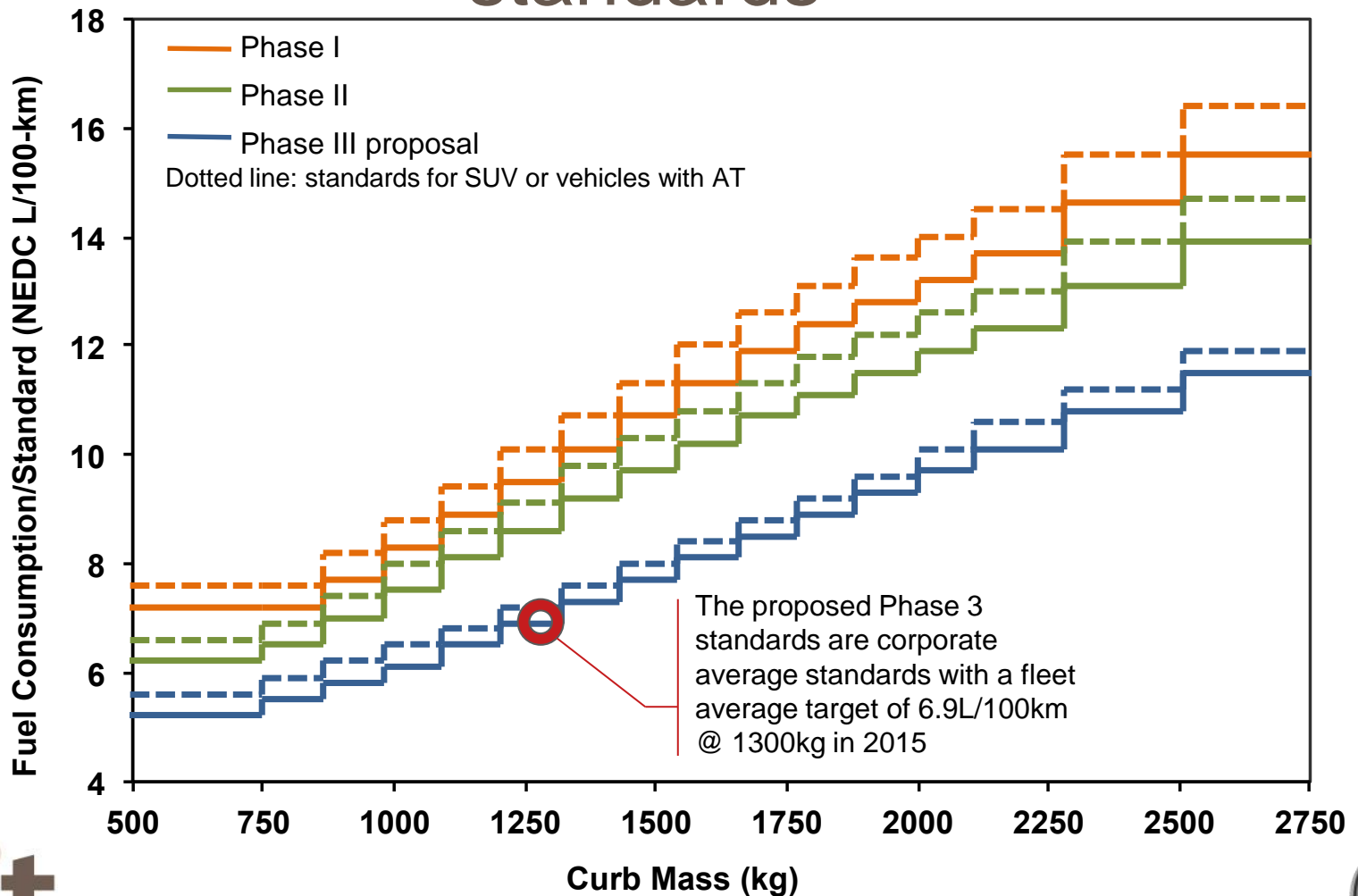
- China became the largest auto producer and market since 2009.
 - Both production and sale volume exceeded 18 millions in 2010.
- Fuel consumption by vehicles has been putting increasing pressure on China's energy security and conservation.
 - Increasing dependence on imported oil (crude oil imports exceeding 50% in early 2010)
 - Motor vehicles consume 80% of petrol and 42% of diesel in 2009, and are seeing rapid growth in the future
- Enforcement agency of new vehicle fuel consumption standards: MIIT



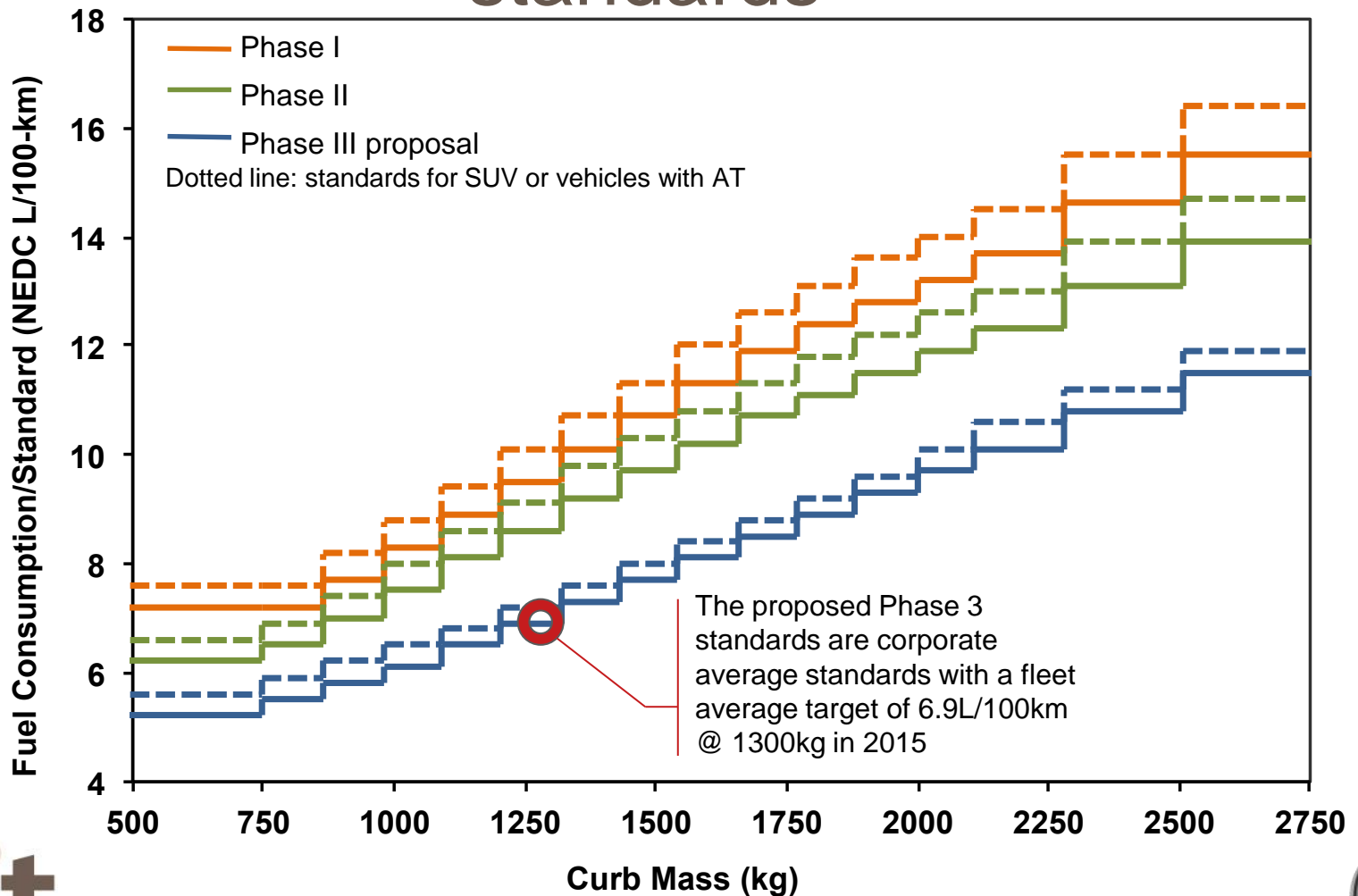
Timeline of fuel consumption standards for new vehicle fleets



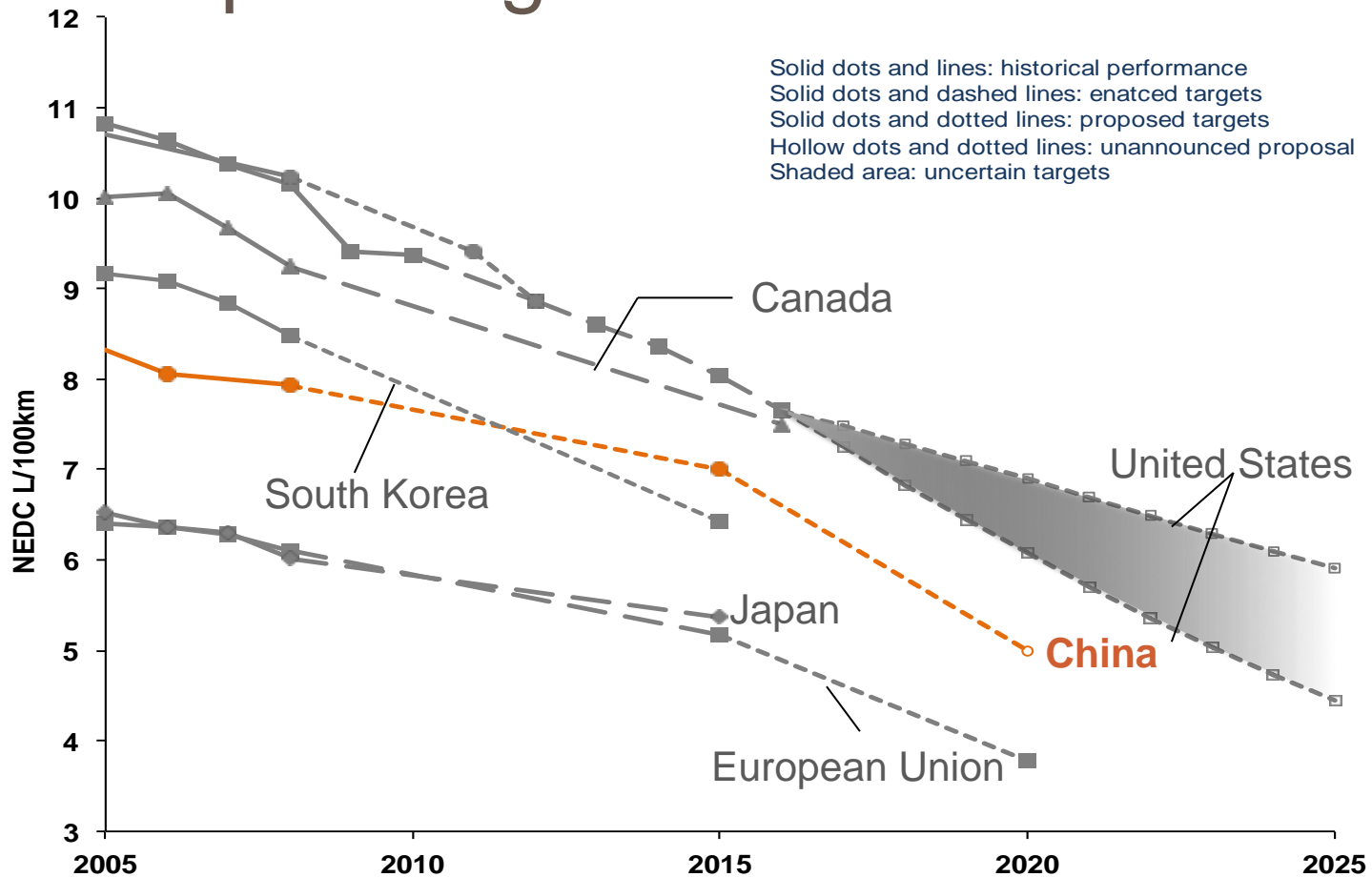
New passenger car fuel consumption standards



New passenger car fuel consumption standards



Relative stringency of Chinese passenger car standard



[1] Based on 3% annual fleet GHG emissions reduction between 2017 and 2025 in the September 30th NOI [2]
 [2] Based on 5% annual fleet GHG emissions reduction between 2017 and 2025 in the September 30th NOI [2]
 [3] China's target reflects gasoline fleet scenario. If including other fuel types, the target will be lower. [7]



New light commercial vehicle standard

- Per-vehicle fuel consumption limits based on category (N or M), fuel type (petrol or diesel) and combined attributes (GVW + engine displacement)
- Example: limits for N1 petrol vehicles

Mass kg	Displacement L	Phase 1 L/100km	Phase 2 L/100km
$M \leq 2000$	all	8	7.8
$2000 < M \leq 2500$	$V \leq 1.5$	9	8.1
	$1.5 < V \leq 2.0$	10	9
	$2.0 < V \leq 2.5$	11.5	10.4
	$V > 2.5$	13.5	12.5
$2500 < M \leq 3000$	$V \leq 2.0$	10	9
	$2.0 < V \leq 2.5$	12	10.8
	$V > 2.5$	14	12.6
$M > 3000$	$V \leq 2.5$	12.5	11.3
	$2.5 < V \leq 3.0$	14	12.6
	$V > 3.0$	15.5	14



Progress of new heavy-duty vehicle fuel consumption standard development

- Rulemaking process
 - China Automotive Technology and Research Center (CATARC) develops test procedure (3 drafts before finalized by Ministry)
 - Test procedure implemented voluntarily for collecting baseline fuel consumption data while standards are developed
 - Standard expected to be adopted in 2012 and implemented in 2015 at the earliest
- Proposed test procedure released in 2010, formally adopted in 2011
 - Base models required to be tested using chassis dyno, variant models fuel consumption can be estimated using simulation model
 - Simulation model developed by CATARC



Light duty vehicle labeling

Manufacturer

Model, engine specifications:
displacement,
curb weight,
fuel type, power
and
transmission

Other notes

Fuel consumption:
urban, extra
urban, and
combined

**Applicable
Phase II fuel
consumption
standard limit**

企业标志 **汽车燃料消耗量标识**
AUTOMOBILE FUEL CONSUMPTION LABEL

生产企业:
车辆型号:
发动机型号:
排量: ml
变速器类型:
整车整备质量: kg
其它信息:

燃料类型:
额定功率: kw
驱动型式:
最大设计总质量: kg

燃料消耗量

市区工况: XX.X L/100km
综合工况: **XX.X** L/100km
市郊工况: XX.X L/100km

适用国家标准为GB XXXX-XXXX;
第X阶段要求自XXXX年XX月XX日开始执行,
对应限值为XX.X L/100km;
第X阶段要求自XXXX年XX月XX日开始执行,
对应限值为XX.X L/100km。

说明
本标识所采用的燃料消耗量数据系根据GB/T XXXX-XXXX《轻型汽车燃料消耗量试验方法》测定。
由于驾驶习惯、道路状况、气候条件和燃料品质等因素的影响,实际燃料消耗量可能与本标识的燃料消耗量不同。
为避免标识影响视野,请在购买车辆后去除标识。

备案号: 启用日期: XXXX年XX月XX日

Source of images: CATARC



Vehicle Fiscal Policies

- Three major vehicle taxes and fees are not linked to engine size instead of fuel consumption or CO₂ emissions.
- Temporary tax relief for small vehicles (under 1.6L) in 2009-2010.
- One-time purchase subsidy (3,000 *yuan*) for energy-saving and small vehicles.
 - Engine size must be less than or equal to 1.6L
 - Must achieve the specific fuel consumption limit in the proposed Phase III standard
 - Eligible vehicles will be given a special sticker



New Energy Vehicle (NEV) Policies

- Baseline: total sales of new energy vehicles (PHEV, BEV, FC) in 2010 was only 12 k, *less than 1%* of the total market of 18 million.
- New Energy Vehicle Industry Development Plan to be released in 2011
 - Over 100 billion *yuan* government investment in core technology development,
 - Targets 5 million cumulative sales of new energy vehicles by 2020
- “Ten city thousand NEVs” expanded to 25 pilot cities for publicly used NEV subsidy in 2010
- Five pilot cities for private NEV subsidy in 2010



Subsidies for public service NEVs

- Light duty vehicles

Type	Gas Saving	Electricity as % of overall power			
		BSG	10%-20%	20%-30%	30%-100%
HEV/PHEV	5-10%	4			
	10-20%	4	28	32	
	20-30%		32	36	42
	30-40%			42	45
	>40%				50
BEV	100%				60
Fuel Cell	100%				250

In thousand RMB

- Buses

Type	Gas Saving	Lead-Acid	NiMH/LiB/Super Capacitor Electricity as % of overall power	
			20-50%	>50%
HEV/PHEV	10-20%	50	200	
	20-30%	70	250	300
	30-40%	80	300	360
	>40%		350	420
BEV	100%			500
Fuel Cell	100%			600

In thousand RMB



Subsidies for private NEVs and HEVs

■ PHEV/BEV

- Apply to 5 pilot cities that promote private PHEV/BEV
- Determined by battery capacity

Type	Subsidy	Cap
PHEV (>10kWh)	3 per kWh	50
BEV (>15kWh)	3 per kWh	60
Fuel Cell	No mention	

In thousand RMB

■ HEV

- As part of a temporary preferential policy for energy-saving product, applied nationwide
- RMB3,000 (US\$450)
- <1.6L engine and >20% gas saving compared with conventional models of the same size



Local Programs

- Low carbon development path pilot program
 - Launched by NDRC in August 2010
 - Pilot cities/provinces to develop low carbon development plans, accelerate development of low carbon industry and promote low carbon lifestyles and consumption
 - Pilot cities/provinces to include the local carbon development plan in respective 12th Five Year Plan
 - 5 pilot provinces (Guangdong, Liaoning, Hubei, Shaanxi, and Yunnan) and 8 pilot cities (Tianjin, Chongqing, Xiamen, Hangzhou, Nanchang, Guiyan, Baoding)



Conclusion

- Efforts to decarbonize road transport driven initially by energy security concerns, but more recently linked to climate change
- Combination of regulatory and technology push, and market pull
- New energy vehicle incentive policies did not account for upstream emissions.



Thank you!

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