



New EV policies in China and EV testing results

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Domestic NEV Policy

	Policy	Release Date
1	Management rules for new energy vehicle production enterprises and product access	2009-07-01
2	Development plan for Energy saving and new energy vehicle industry (2012-2020)	2012-06-28
3	Interim measures for financial incentives fund management for innovation projects in new energy vehicle industry	2012-10-13
4	Notice on continuing promoting the application of new energy vehicle	2013-09-17
5	Notice on implementing promotion of energy-saving passenger vehicle (lower than 1.6L)	2013-09-30



Notice on continuing promoting the application of new energy vehicle

- **Released by**: the Ministry of Finance, the Ministry of Industry and Information Technology of China, etc.
- **Aim**: NEV promotion from 2013 to 2015.
- **Promoted vehicle types**: battery electric vehicles (BEV), plug-in hybrid electric vehicles (PHEV) and fuel cell vehicles (FCV).
- **Incentives**: target all customers



Notice on continuing promoting the application of new energy vehicle

➤1. Subsidy Standards for Passenger Vehicles in 2013 (unit: 10,000 RMB/car)

Vehicle Type	Range (battery only) R (NEDC cycle, km)			
	$80 \leq R < 150$	$150 \leq R < 250$	$R \geq 250$	$R \geq 50$
Battery Electric Passenger Vehicles	3.5	5	6	/
Plug-in Hybrid Passenger Vehicles (including EREV)	/	/	/	3.5



Notice on continuing promoting the application of new energy vehicle

➤2. Subsidy Standards for commercial Vehicles in 2013 (unit: 10,000 RMB/car)

Vehicle Type	Vehicle Length L (m)		
	$6 \leq L < 8$	$8 \leq L < 10$	$L \geq 10$
Battery Electric Commercial Vehicles	30	40	50
Plug-in Hybrid Commercial Vehicles (including EREV)	/		25

In addition: quota subsidy for super-capacitor electric commercial vehicles and lithium titanate fast charging electric commercial vehicles is 150,000RMB.



Notice on continuing promoting the application of new energy vehicle

- 3. Subsidy Standards for battery electric special vehicles (mainly: postal service, logistics, sanitation, etc) in 2013:

The subsidy is 2000RMB/KWH based on the battery capacity. The total subsidy for each vehicle is up to 150,000RMB.



Notice on continuing promoting the application of new energy vehicle

➤4. Subsidy Standards for Fuel Cell Vehicles in 2013 (unit: 10,000 RMB/car)

Vehicle Type	Subsidy Standard
Fuel Cell Passenger Vehicles	20
Fuel Cell Commercial Vehicles	50



Notice on continuing promoting the application of new energy vehicle

- In year 2014 and 2015, the subsidy standards for battery electric passenger vehicles, plug-in hybrid electric passenger vehicles (including EREV), battery electric special vehicles and fuel cell vehicles will decline by 10% and 20% respectively, compared with year 2013. Standards for battery electric public buses and plug-in hybrid (including EREV) electric busses will remain the same.

- The central finance will distribute financial incentives to pilot cities, according to a certain proportion of the total local investment in charging facility construction, thus to encourage and guide the social power to participate in construction and operation of the charging supporting facilities.



Notice on implementing promotion of energy-saving passenger vehicle (lower than 1.6L)

On Sep 30th 2013, “Notice on implementing promotion of energy-saving passenger vehicle (lower than 1.6L)” was jointly released by the Ministry of Finance, the National Development and Reform Commission and the Ministry of Industry and Information Technology of China.

Period: Oct 1st 2013 – Dec 31st 2015

Scope: Passenger vehicle with engine displacement lower than 1.6L, including HEV (not PHEV)

Requirements:

- Product fuel consumption standard (specific criteria are listed in the table below)
- Exhaust emission standard China V.

Kerb mass (kg)	With 2 rows (or lower) of chairs (L/100km)	With 3 rows (or above) of chairs (L/100km)
CM≤750	4.7	5.0
750<CM≤865	4.9	5.2
865<CM≤980	5.1	5.4
980<CM≤1090	5.3	5.6
1090<CM≤1205	5.6	5.9
CM>1205	5.9	



Testing Results of Vehicle Energy Efficiency and Range



1. Test procedures

1.1 Test procedures

- Comparison of NEDC and WLTC (ambient temperature)
- Comparison of NEDC and WLTC (Environmental temperature 38 °C AC ON)

1.1 Test standards

- GB/T 18385-2005 Electric vehicles-power performance-test method
- GB/T 18386-2005 Electric vehicles-energy consumption and range-test procedures
- GRPE-66-02 - (WLTP) Draft GTR on WLTP

NEDC: New European Driving Cycle

WLTC: World Light Test Cycle



1. Test procedures

1.3 Test procedures

- Battery full discharge (70% maximum speed within 30 min) ;
- Battery charge ;

- Test under NEDC ;
- Battery charge ;
- Test under WLTC ;
- Battery charge;

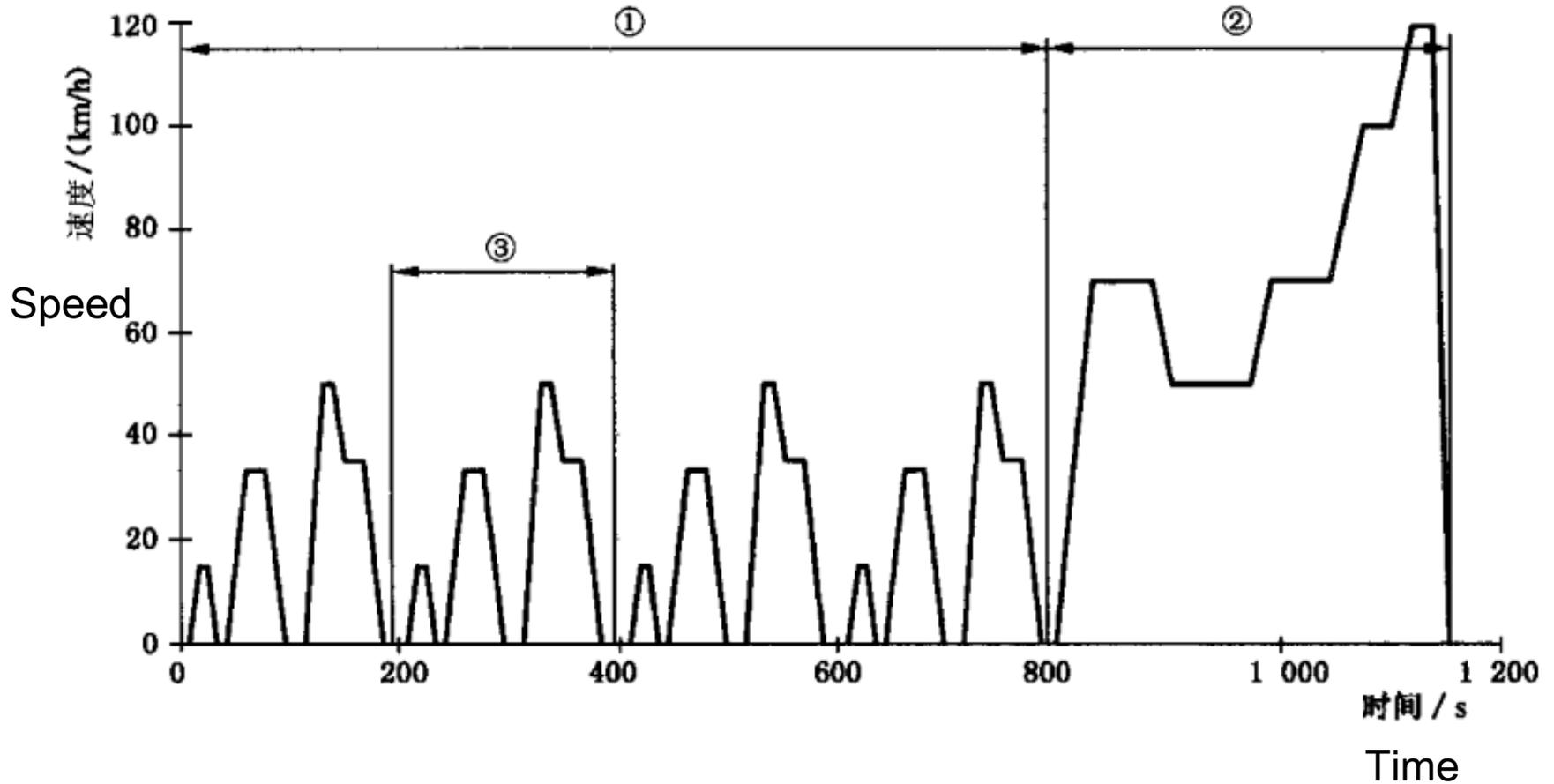
- Test under NEDC ; (Environmental 38 °C AC on)
- Battery charge ;
- Test under WLTC ; (Environmental 38 °C AC on)
- Battery charge;



1. Test procedures

1.4 Test cycle (NEDC)

NEDC CYCLE TIME : 1180S





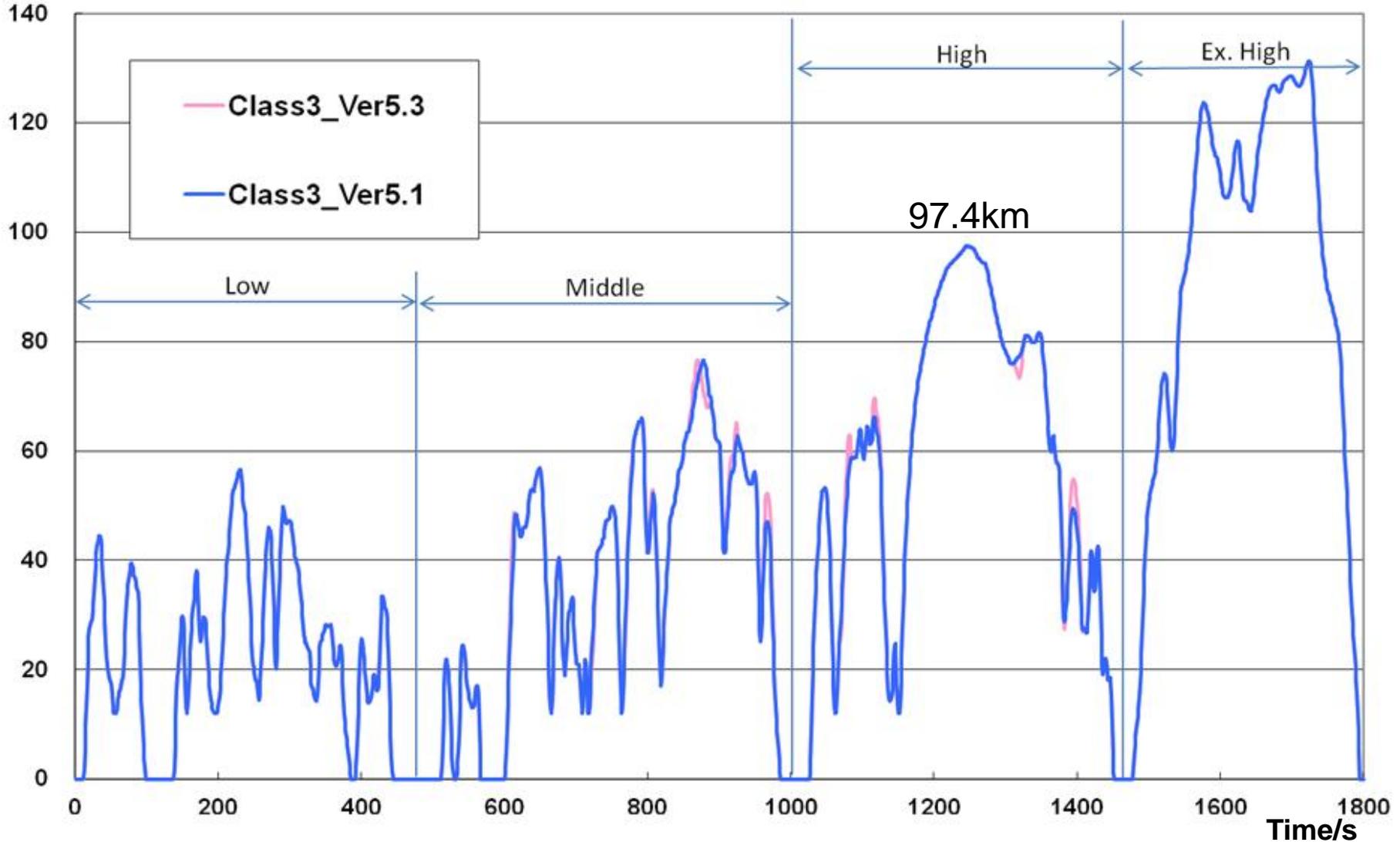
1. Test procedures

1.4 Test cycle (WLTC, CLASS 3 Not including EX-High)

WLTC CYCLE TIME : 1477S

131.3km

Speed/km





2. Test results

2.1 Comparison of results under NEDC and WLTC cycle

	Test parameters	Room temperature (25 °C)	High temperature environment (38 °C)
NEDC	Reference energy consumption (Wh/km)	153.39	390
	Range (km)	118	46
WLTC	Reference energy consumption (Wh/km)	150.33	310
	Range (km)	121	58

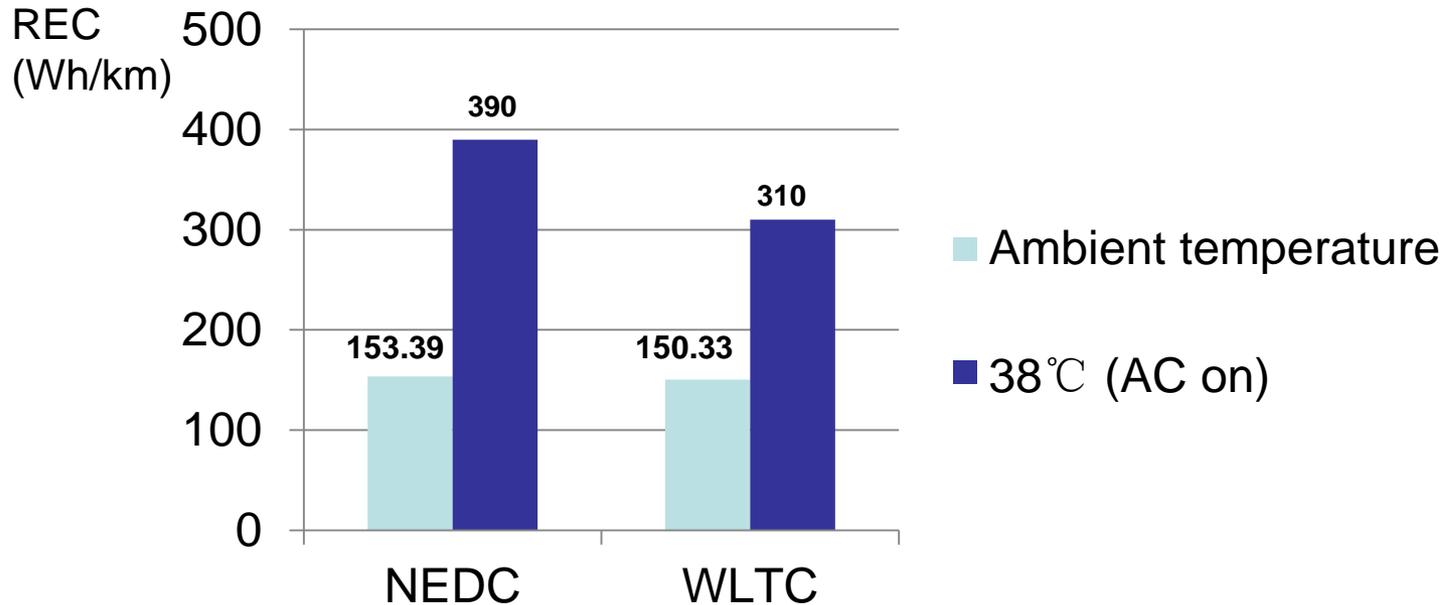
Note :

- 1、 No energy regeneration during testing , gear : AT ;
- 2、 The adopted WLTC cycle was CLASS 3 VER.5.1;
- 3、 AC temperature control: 25 °C (passenger cabin) ;



2. Test results

➤ Reference energy consumption (REC) under different cycles at ambient temperature and 38 °C (AC control set to 25 °C).



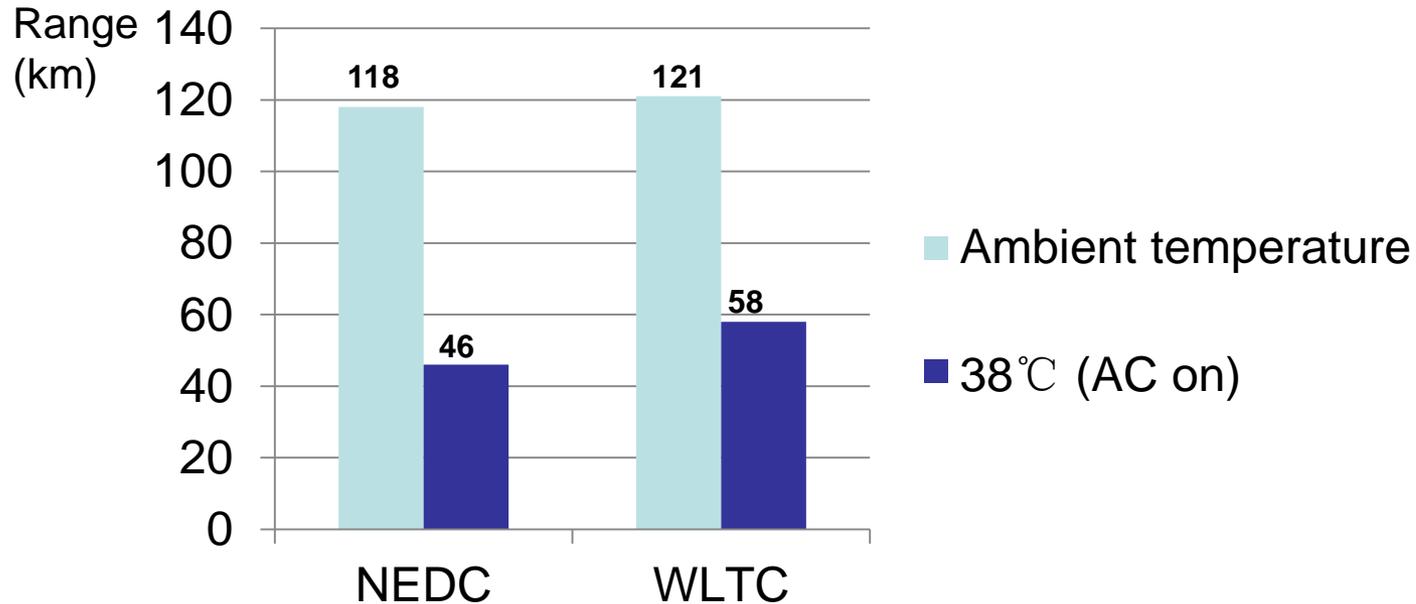
NEDC: REC increased by 154% with AC on.

WLTC: REC increased by 106% with AC on.



2. Test results

➤ Range under different cycles at ambient temperature and 38 °C (AC set to 25 °C).



NEDC: Range was reduced to 39% with AC on.

WLTC: Range was reduced to 48% with AC on.



3. Conclusion

➤ Reference energy consumption (Wh/km):

NEDC > WLTC

➤ Range (km):

NEDC < WLTC

➤ Average vehicle speed & theoretical range

NEDC : 33.6 km/h, 11.01km;

WLTC : 36.4 km/h, 14.94km;

➤ Effect of AC:

□ Vehicle performance was greatly affected by AC, which results in more than 100% higher energy consumption and more than 50% range decrease.



3. Conclusion

- ❑ EVE-04-05e: The total added energy requirement for climate @ +10°C: 10 - 20 %, @ -10°C: 40 - 55% (Dr. Tober).
- ❑ Vehicle appears to have lower energy consumption and better range under WLTC cycle, compared with NEDC cycle.



Thank you