



Asean Renewable Energy Development and Promotion Foundation

211/2 V.S.S Bldg, 6Th fl, Ratchadaphisek Rd., Din-Daeng, Bangkok 10400.

Tel 02 276 7908-9, Fax 02 276 7913

HYDROGEN ON DEMAND SYSTEM

ROAD TEST REPORT

October 10, 2009

Make	KIA	Model	K270011
Year	2005	License Plate	ตฐ 6497
Mileage	57824	No. Cyl.	4
Engine No	J2431994	Chassis No.	KNCSE211267106789
Fuel Type	Diesel	Vol. CC.	2,700
Gear	Manual	Transmission	RWD
Air condition	ON	HP	85
Load (Kgs)	0	Ambient Temp (C)	36
Weather	Sunny	Wind Speed Km/hr	0.5
Hydrogen Generator Type	Dry Cell	Make	Millennium HHO Generator
Current (DCA)	20	Model	PL-12-3000
Voltage (VDC)	13.8	Inspector	Chanchai
Fuel Consumption @ 60 km/hr	15.13 km/L	Driver	Boonsuan

Table 1 Fuel Consumption with and without Hydrogen on Demand

	W/O HHO	W/ HHO	%
Km/hr	Km/L	Km/L	Fuel Save
50	17.27	11.25	-29.07
60	15.13	11.42	-24.52
70	13.12	11.20	-14.63
80	11.42	12.14	6.30
90	9.45	10.64	12.59
100	7.66	8.96	16.97
110	4.62	6.10	32.03

Remarks: ใช้เกียร์ 5 ทุกความเร็วที่ทดสอบ ทดสอบในระยะครั้งละ 10 กิโลเมตร



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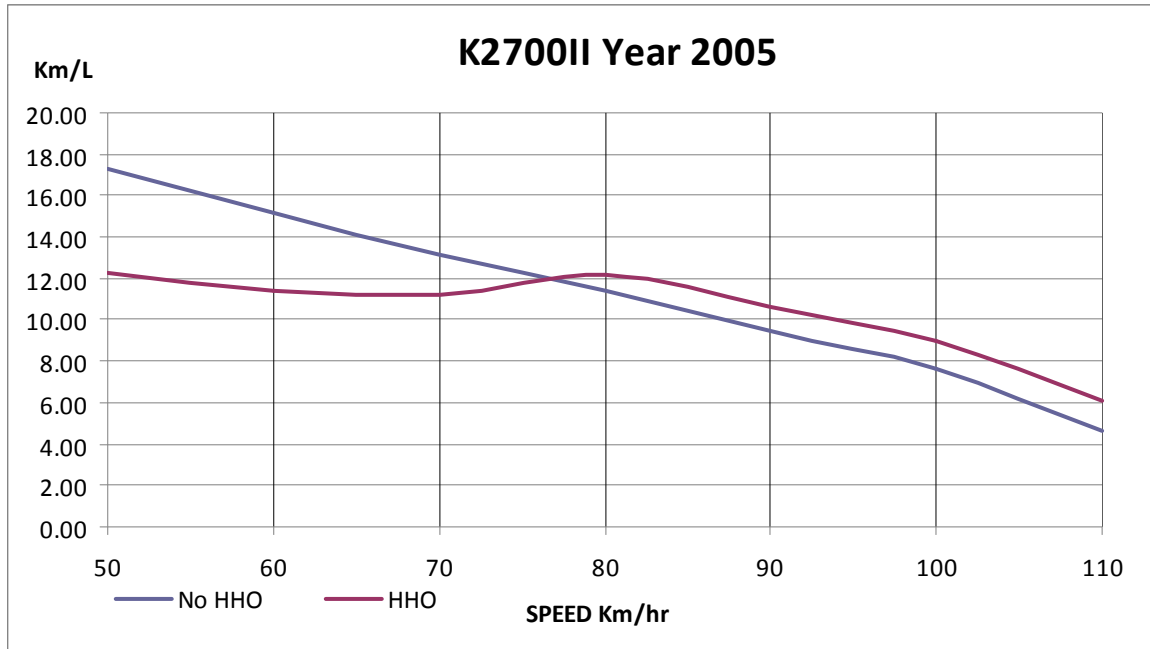


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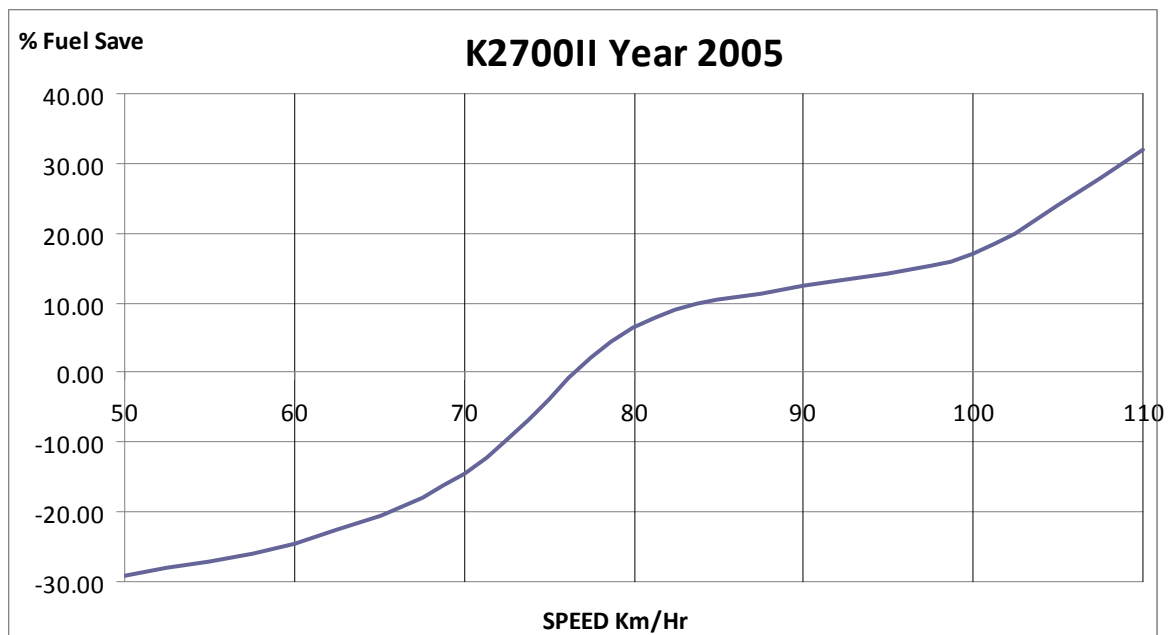
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Graph 1 Show relation between speed (Km/Hr) and fuel consumption (Km/L)

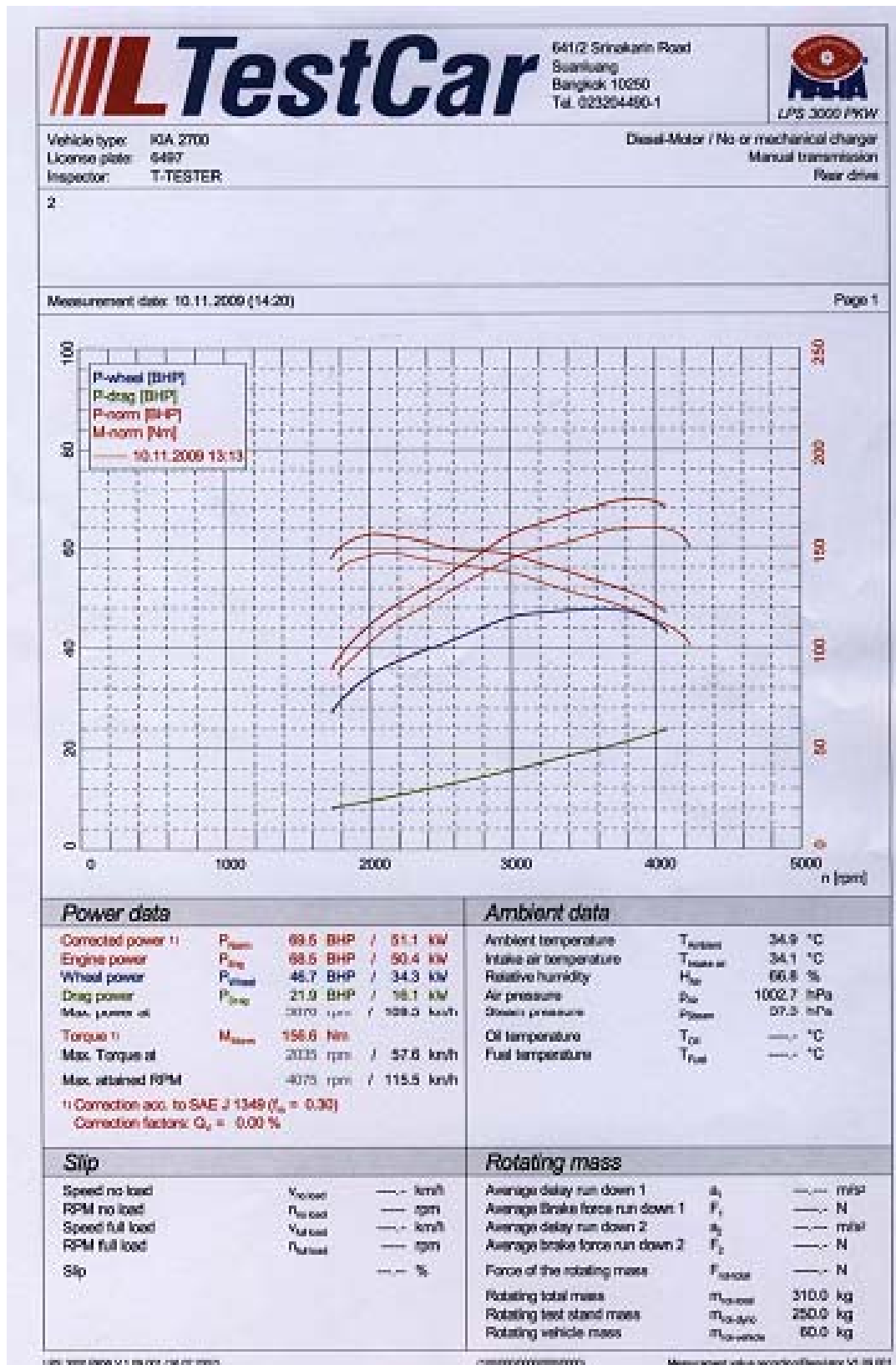


Graph 2 Show relation between Speed (Km/Hr) and % Fuel consumption save.





Graph 3 Dynamo Test





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Graph 4 Emission Test

Car		Car	
Name/Co.:		License pl. no.:	6497
Street:		Mileage:	59258
Zip code, city:		Init.reg.:	-
Telephone:		Vehicle manuf.:	KIA
Test date:	10.11.2009	Vehicle type:	K2700
Time time:	13:22	Veh. chassis no.:	KNCSE211267106789
loading status		number of axes:	2

target value k Max	2.50 m ⁻¹
VEH-category	B
Oil-Temp.	--,-

Measurement	k-value [m ⁻¹]	Oil-Temp. [°C]
1	1.89	--,-
2	1.64	--,-
3	2.03	--,-
4	1.67	--,-
k-Mean	1.81 m⁻¹	
total results	Emission test passed	

Zero point drift --,-

Graph 5 Emission Test with HHO

Car		Car	
Name/Co.:		License pl. no.:	6497
Street:		Mileage:	59269
Zip code, city:		Init.reg.:	-
Telephone:		Vehicle manuf.:	KIA
Test date:	10.11.2009	Vehicle type:	K2700
Time time:	14:25	Veh. chassis no.:	KNCSE211267106789
loading status		number of axes:	2

target value k Max	2.50 m ⁻¹
VEH-category	B
Oil-Temp.	--,-

Measurement	k-value [m ⁻¹]	Oil-Temp. [°C]
1	1.10	--,-
2	1.82	--,-
3	1.82	--,-
4	1.77	--,-
k-Mean	1.63 m⁻¹	
total results	Emission test passed	

Zero point drift --,-