Fuelstar Fuel-saving Device D400, C300
Efficiency Test Report

Testing Unit: Research and Development Centre of Green Engineering
Kao Yuan University

Manufacturer: Fuelstar Fuel Combustion Technology Limited
Auckland, New Zealand

Taiwan Agency: Vast World Enterprise Co. LTD

Test Data
Provided by: Weng-Yang Transportation Cooperation

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A. Preface

In accordance with the Commission Agreement, Vast World Enterprise Co. Ltd. shall provide the following information:

1. The vehicle record with the number plate "X6-586" from January to May last year as well as the record from June last year to February this year (altogether 9 months) after the installation of Fuelstar fuel-saving device C300.
2. The vehicle record with the number plate "X6-968" from April to May last year as well as the record from June last year to February this year (altogether 9 months) after the installation of Fuelstar fuel-saving device D400.
3. The vehicle record with the number plate "X6-988" of May last year as well as the record from June last year to February this year (altogether 9 months) after the installation of Fuelstar fuel-saving device C300.

The complete detailed vehicle record provided by Vast World Enterprise Co. Ltd. regarding the three vehicles is as Attachment 1.

At the same time Vast World Enterprise Co. Ltd. commissioned AMH (Australian Merchant Holdings) to provide an identical test report on fuel-saving efficiency (with the result as: fuel-saving efficiency 8.209%). The complete report is as Attachment 2.

Research and Development Centre of Green Engineering, Kao Yuan University has conducted a fuel-saving efficiency index evaluation in relation to the following four results:

$$\text{1. Maximum Fuel-saving Efficiency (\%)} = \frac{\text{Prediction} - \text{Uninstalled}_{\text{average}}}{\text{Uninstalled}_{\text{average}}}$$

$$\text{2. Optimistic Fuel-saving Efficiency (\%)} = \frac{\text{Installed}_{\text{good}} - \text{Uninstalled}_{\text{average}}}{\text{Uninstalled}_{\text{average}}}$$

$$\text{3. Average Fuel-saving Efficiency (\%)} = \frac{\text{Installed}_{\text{average}} - \text{Uninstalled}_{\text{average}}}{\text{Uninstalled}_{\text{average}}}$$

4. Prediction of the saturated fuel consumption of the fuel-saving device (kilometres per litre), based on a grey Verhulst model.

Note: 1. "Installed $_{good}$" refers to the kilometres per litre of the highest month after the installation of the fuel-saving device.
2. "Uninstalled $_{average}$" refers to the average value of the kilometres per litre of the three months before the installation of the fuel-saving device.
3. "Installed $_{average}$" refers to the average value of the kilometres per litre of the nine months after the installation of the fuel-saving device.
4. "Prediction" refers to the predicted saturated fuel consumption of Verhulst.

As for the prediction of the rising price of premium diesel oil, the Research and Development Centre of Green Engineering has made a prediction of the average premium diesel oil prices of next two years (2008 and 2009), based on the annual

average oil prices (yuan / litre) from 1999 to 2007, using the prediction models of GM(1,1) and grey (1,1) Alpha (the errors of both models are within 5% respectively).

B. Fuel-saving Efficiency Analysis

Number Plate	X6-586 (C300)	X6-968 (D400)	X6-988 (C300)	Average
	Kilometre / Litre			
01/2006	2.739	-	-	2.739
02/2006	2.767	-	-	2.767
03/2006	2.627	-	-	2.627
04/2006	2.659	2.418	-	2.539
05/2006	2.635	2.496	2.604	2.578
Average (km/litre) before installation	2.685	2.457	2.604	2.650
06/2006	2.620 (not counted)	2.542 (not counted)	2.482 (not counted)	-
07/2006	2.770 (not counted)	2.558 (not counted)	2.522 (not counted)	-
08/2006	Min. = 2.839	2.616	Min. = 2.628	2.694
09/2006	Max. = 2.936	2.569	2.697	2.734
10/2006	2.915	Min. = 2.51	Max. = 2.965	2.797
11/2006	2.912	2.553	2.692	2.719
12/2006	2.879	Max. = 2.696	2.74	2.772
01/2007	2.842	2.687	2.839	2.789
02/2007	2.875	2.691	2.804	2.790
Average (km/litre) after installation	2.885	2.617	2.766	2.756
Saturation prediction (km/litre)	3.060	2.804	2.934	2.933
Average result (%)	7.449	6.512	6.221	6.727
Optimistic result (%)	9.348	9.727	13.863	10.979
Maximum result (%)	13.966	14.123	12.673	13.587
Remarks				

Note: 1. (not counted): As there is a running in period of two months after the installation, the first two months are generally not counted.

2. Min: 06/2006 – 02/2007 kilometres per litre of the lowest month after the installation of the fuel-saving device.

3. Max: 06/2006 – 02/2007 kilometres per litre of the highest month after the installation of the fuel-saving device.

C. Prediction of the Price of Premium Diesel Oil

Year		1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Yuan / litre	GM (1,1)	12.4	14.5	13.9	14.4	15.2	17.6	19.8	23.4	25.8	27.6	30.6
	GM (1,1) Alpha										26.7	29.4

D. Fuel-saving Efficiency Instruction

1. According to the fuel consumption of the nine months after the installation of the fuel-saving device, all vehicles show increasingly fuel-saving tendency. The saturation predicted value (fuel-saving saturation point) of the vehicle "X6-586" may reach as high as 3.060 km / litre; that of the vehicle "X6-968" 2.804 km / litre and that of the vehicle "X6-988" 2.934 km / litre. The mean is 2.946 km / litre and the full distance range is 2.804 ~ 3.060 km / litre. Based on this saturation predicted value, the fuel-saving efficiency of the three vehicles may reach as high as 13.587% in average.
2. The optimistic fuel-saving efficiency of the three vehicles may reach 10.979% in average and the average fuel-saving efficiency may reach at least 6.727%
3. 3. According to the current low vehicle maintenance and drivers' training situation in general in the freight transport industry, based on the optimistic fuel-saving results, with appropriate management measures, the fuel-saving results are worthwhile to be considered
4. Based on the average fuel-saving efficiency of 6.727%, if calculated by average 12,000 km per vehicle per month, given the condition of average oil price at NT$25.8 / litre in 2007, each vehicle may save 305 litre of premium diesel oil, or NT$ 7,869 each month. Given the condition of average oil price at NT$27.6 / litre in 2008, each vehicle may save NT$8,418 each month. Given the condition of average oil price at NT$30.6 / litre in 2009, each vehicle may save NT$ 9,333 each month. If based on the optimistic fuel-saving efficiency of 10,979%, each vehicle may save 497 litre of premium diesel oil each month, i.e. NT$ 12,823 each month in 2007; NT$ 13,717 each month in 2008 and NT$ 15,208 each month in 2009. If based on the maximum fuel-saving efficiency of 13.587%, each vehicle may save NT$ 15,867 each month in 2007; NT$ 16,974 in 2008 and NT$ 18,819 in 2009.

Note: The amount of fuel saved each month = kilometres ÷ "Uninstalled $_{\text{average}}$" x fuel-saving rate%

E. The Amount of Pollutant Emission

Given the maximum fuel-saving efficiency, each vehicle may cut down pollutant emission by 1.008 metric tons. Given the optimistic fuel-saving efficiency, each vehicle may cut down pollutant emission by 0.815 metric ton. This fuel-saving efficiency will surely slow down the pace of global climate change caused by the greenhouse effect.